



Indian Institute of Technology Bombay

Type of the institute:	Indian Institute of Technology
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About the Institute

Established in 1958, the second of its kind, IIT Bombay was the first to be set up with foreign assistance. The funds from UNESCO came as Roubles from the then Soviet Union. In 1961 Parliament decreed the IITs as 'Institutes of National Importance'. Since then, IITB has grown from strength to strength to emerge as one of the top technical universities in the world.

The institute is recognised worldwide as a leader in the field of engineering education and research. Reputed for the outstanding calibre of students graduating from its undergraduate and postgraduate programmes, the institute attracts the best students from the country for its bachelor's, master's and doctoral programmes. Research and academic programmes at IIT Bombay are driven by an outstanding faculty, many of whom are reputed for their research contributions internationally.

IIT Bombay also builds links with peer universities and institutes, both at the national and the international levels, to enhance research and enrich its educational programmes. The alumni have distinguished themselves through their achievements in and contributions to industry,

academics, research, business, government and social domains. The institute continues to work closely with the alumni to enhance its activities through interactions in academic and research programmes as well as to mobilise financial support.

Over the years, the institute has created a niche for its innovative short-term courses through continuing education and distance education programmes. Members of the faculty of the institute have won many prestigious awards and recognitions, including the Shanti Swaroop Bhatnagar and Padma awards.

Located in Powai, one of the northern suburbs of Mumbai, the residents of the institute reap the advantage of being in the busy financial capital of India, while at the same time enjoying the serenity of a campus known for its natural beauty. A fully residential institute, all its students are accommodated in its 15 hostels with in-house dining; the campus also provides excellent amenities for sports and other recreational facilities.

Fee Structure

Fee Structure for UG New Entrants

B. Tech., Dual Degree (B.Tech. + M.Tech.), B.S. and B. Des. programmes

(Autumn Semester 2021-22)

A	Description (At the time of Admission)	Indian nationals	Foreign nationals
		Fee Payable (Rs.)	[including OCI and PIO card holders] Fee Payable (Rs.)
1	Admission Fee	2200	2200
2	Graduate Transcript Fee	500	500
3	Provisional Certificate	500	500

4	Medical Examination		400	400
5	Students' Welfare Fund		1000	1000
6	Modernisation & Up-gradation		2500	2500
7	Identity Card		500	500
	Total (A)		7600	7600
B	Per Semester			
1	Tuition Fee - Statutory Fees		100000	300000
2	Examination Fee		1000	1000
3	Registration Fee		750	750
4	Gymkhana Fee		500	500
5	*Medical Fee		1500	1500
6	*Hostel Rent		2000	2000
7	*Electricity & Water Charges		3000	3000
8	*Hostel Establishment Charges		3000	3000

9	#Mess Establishment Charges		1550	1550
10	Student Benevolent Fund		500	500
11	Student accident insurance fund (SAIF)		200	200
	Total (B)		1,14,000	3,14,000
C	Deposits (onetime fee only)			
1	Institute Security Deposits		1000	1000
2	Library Security Deposits		1000	1000
3	Mess Security Deposits		1000	1000
	Total (C)		3000	3000
	Grand Total (A+B+C)		1,24,600	3,24,600

1.
 - (a) All SC/ST/PwD category students are exempted from the payment of Tuition Fee (B.1).
 - (b) *Fee components B - (6 to 8) will be applicable only to the students who are permitted to stay on campus in hostels, will opt to do so and be allotted a room. The

charges against fee components B - (6 to 8) will be NIL for those who are NOT permitted to stay on campus in hostels or do NOT opt to stay even if permitted (such students will not be eligible for any medical benefits normally available to students paying the fee against B - 6).

3. (c) #Fee components B - (9-10) will be applicable to all students for the upkeep and maintenance of the hostel and mess facilities.
4. (d) In view of the COVID-19 pandemic, all students, who would be permitted to stay on campus in hostels are required to get the COVID-19 health insurance on their own for a minimum period covering the period of their semesterly stay, before commencement of their stay on campus. The premium paid towards this insurance will be reimbursable up to Rs 500/-, out of the Medical Fee paid, against policy payment invoice/ receipt. Name, Roll No. and Hostel No.) with the subject as "Request for Covid Medical Insurance Premium Reimbursement" along with self attested photo copy of Health Insurance Policy / Premium Paid Receipt to Dean SA office (Email: dean.sa.office@iitb.ac.in) for reimbursement.
5. (e) Every student, who would be permitted to stay in hostel, has to pay a "per semester mess advance" of Rs.22,000/-.
6. (f) IIT Bombay reserves the right to revise the fee structure in subsequent semesters.
7. (g) B.Tech., B.S. and B.Des. are 4-Years (8 Semesters), and Dual Degree (B.Tech. + M.Tech.) is a 5-Years (10 Semesters) Programme.
8. (h) *#Students who do not wish to stay on campus in hostels for the entire duration of their program i.e. they opt to remain as day scholars throughout the period of their program till completion, may be exempted from payment of fee components B - (6 to 10). Such students will not be allotted a hostel room and will not be eligible for any medical facility from the Institute. If at any later date, such a student wishes to be allotted a hostel room to stay on campus, this will be subject to availability and payment of fee components B - (9-10) for all previous semesters from the date of joining the program to the semester in which room is allotted, besides payment of all fee components B - (6 to 10) from the semester of room allotment.

Academic Structure

The Institute offers undergraduate and postgraduate programs in engineering, science, management, design and humanities. This includes B. Tech., M. Tech., - B.S., B.Des, M. Sc., M. Phil., M. Des., M. Mgmt., EMBA, MUDE, MPP Ph.D. and dual degree programs like B.Tech.+M.Tech., M.Sc.+Ph.D., M.Tech.+Ph.D. and M. Phil.+ Ph. D.

Currently, the Institute has twenty-six Academic Units: this includes fourteen departments, one school, six centres and five interdisciplinary programs. These Units constitute the academic fabric of the Institute. The teaching programs are characterized by their flexibility and informality. The strong faculty-student interaction on the residential campus provides an opportunity to students to work on seminars, publication and projects sponsored by the industry and national agencies.

IIT Bombay follows a semester system. An academic year (July-May) consists of two semesters, each of approximately 16 weeks duration. The first semester begins in the last week of July and ends by the last week of November. The second semester starts in the first week of January and

ends by the last week of May. In each of the two semesters of the first year, a student is required to register for the relevant courses listed in the curriculum for that semester.

The Institute follows a credit system. Credits are allotted to various courses depending upon the number of lectures, tutorials and laboratory hours per week. The student's performance in a course is continuously evaluated throughout the semester and culminates in the award of a Grade on a 10-point scale. Performance in a semester is evaluated in terms of the weighted average of grade points secured in all the courses registered in that semester, which is known as Semester Performance Index (SPI). A Cumulative Performance Index (CPI) is the weighted average of the grade points obtained in all the courses registered by the student since the time of joining the Institute.

IIT Bombay offers the following undergraduate programs through JEE (Advanced) 2021

- B.Tech.
- Dual Degree (B.Tech. + M.Tech.)
- B.S.

The B.Tech. and B.S. programs consist of eight semesters spread over four years. The Dual Degree B. Tech.-M.Tech. program consists of 10 semesters spread over five years. A B.Tech. degree of the parent academic unit and an M.Tech. degree of a specialization within the parent (Dual Degree) and other academic units (Interdisciplinary Dual Degree) is given at the end of the fifth year. A "Minor" is an additional credential a student may earn for doing prescribed additional courses in a discipline other than his/her major discipline of B.Tech. Degree. Similarly, "Honours" is awarded to students completing a prescribed set of courses and/or project in their own academic units. This structure of academic programs provides flexibility to suit the varied interests of students and helps build multifarious competencies that employers demand besides satisfying the widely varying attitudes, abilities and aspirations of students.

For more details on "Rules and Regulations", visit
<http://www.iitb.ac.in/newacadhome/rulesUG.jsp>

Faculty

The basic responsibilities of the faculty are teaching, research, technology development and industrial interaction. IIT Bombay is a leading center of scientific and technical teaching. It helps many educational Institutes for technical education in up gradation of syllabi of courses, laboratories and manpower development. The educational methodology developed at IIT Bombay is transferred on continuous basis to engineering colleges through organized interactions in the form of CEP courses, QIP programmes and implementation of the TEQIP scheme of MHRD.

The faculty members are engaged in technology development programmes for industries by consultancy projects and CEP courses. IIT Bombay emphasizes both pure and applied research since they often feed into each other.

Education and research are closely dependent on efficient and imaginative management. Participation in the management of the Institute through participation in academic programmes, administrative committees and outreach programmes for industry and educational institutes are some of the major responsibilities of the faculty members of IITB.

Selection of faculty is through a statutorily constituted selection committee which includes external members, Head, Dean and Director. All candidates deliver seminars and they are interviewed by the selection committee for appointment.

In addition to academic excellence, faculty members at IITB are expected to promote a respect for moral values, duties of citizenship and basic human understanding required for leadership. The strength of the faculty lie in their intellectual and academic distinction attained. The best contribution of this Institute would be to educate young people to solve the real problems faced by our countrymen using the technical knowledge they are imparted during their formative years.

Facilities

IIT Bombay is a residential campus that has all the students and most of the faculty and staff residing on campus. The Institute has 16 students' hostels, which includes separate hostels for women students. Every hostel has modern amenities including a computer room and gym. High speed LAN or Wifi connection is provided in each room. Students are not permitted to operate and maintain motorized vehicles of any type in the campus except on medical grounds. The Institute also has a very good hospital with OPD and 52-bed in-patient facilities. It includes a pathology lab, dental care, radiology, sonography, physiotherapy, and an operation theatre.

The Student Activity Centre (SAC) provides excellent facilities for sports and cultural activities. Sports facilities include a swimming pool, tennis, badminton, volley ball, basket ball and squash courts and vast playgrounds for field games. Wildlife camps and trekking are popular off campus activities. Cultural activities on the campus are fostered by film clubs, classical music societies, debating and drama clubs and a hobbies club. Special labs and facilities exist to support technical activities and innovation support is provided for participation in a variety of international technical competitions. The Institute also has strong NSS/NSO programs. The Entrepreneurship Cell guides students and promotes a spirit of entrepreneurship by organizing competitions, and lectures and workshops by eminent entrepreneurs. A business incubator also provides opportunities to students to develop products and technologies, and to generate their own business ventures. The Cell for Human Values – a unique feature of IIT Bombay, enriches the minds of students through its various activities.

A Faculty Advisor is specially appointed to look after the academic performance and matters related to SC/ST students.

Student Life at Institute

The 550 acres of lush green campus, situated right in the heart of the financial capital of India, IIT-Bombay is considered to be the Mecca of extra-curricular activities. Apart from being the best technical school in the country and one of the top few globally, IITB creates experiences that students don't forget. Students are encouraged and supported to submit research papers and participate in national and international conferences.

A major attraction of IITB is its distinguished faculty. The faculty at IITB is one of the finest among the Indian vocational Institutes. Most members of the faculty are achievers in their own right as well as excellent teachers and mentors. Most of the professors here are research scholars themselves and are deeply involved in their own subjects of interest. It is this attitude of our professors that really makes them special and engaging for our students.

Life at IIT-Bombay is an amalgamation of fun and studies. While the classes and assignments manage to keep students busy during the morning and late at nights respectively, the rest of the day allows them to pursue their extracurricular & co-curricular interests. Some of students find peace in playing cricket and football in the hostel grounds, while others head to the Student Activity Centre to play Badminton or go for a swim. The few who are not into sports are either busy with IIT-B club activities or catching up with some sleep.

IIT-Bombay hosts Mood Indigo (Asia's largest College Cultural festival) and Techfest (Asia's largest Technical and Science festival) which shows its diversified and glorious culture.

In IIT-Bombay almost all students reside in hostel which adds new dimensions to the vibrant campus life. Birthday celebrations and inter and intra hostel events adds fun to the campus life. To sum up studying at IITB can truly be a life changing experience.

Financial Assistance

UNDERGRADUATE SCHOLARSHIP

The Institute offers the following scholarships to undergraduate students:

Institute Scholarships	Private Scholarships	Govt. Scholarships
1. Institute Merit-sum-Means	1. Named Scholarships	1. National Scholarships (all states)
2. Free Messing facilities (SC/ST)		2. National Talent Search Scholarship (NTS)

For more details, visit <http://www.iitb.ac.in/newacadhome/scholar.jsp>

Training & Placement

IIT Bombay is the most preferred academic institute to a large number of organizations for recruiting outstanding employees with immense potential as future leaders. These organizations from both within India and abroad, are excited about the capability, intellect and professional readiness displayed by our students. The most frequently cited praise from these organizations for our students include their ability to learn quickly, versatility, performance as team players, excellent analytical skills, and most important the positive attitude they bring to their jobs.

The institute offers all graduating students an opportunity to participate in the campus placement program. More than 320 recruiting organizations participated in the IIT Bombay campus placement process during the year 2013-14. For the year 2014-15, more than 400 recruiting organizations are expected to participate in the campus placement program.

IIT Bombay has excellent facilities for campus recruitment and strives to make the best possible match between recruiters and students. IIT Bombay was ranked number 60 in the world for "Employer Reputation" in the 2014 QS World University Ranking.

Industry And Alumni Relations

The Institute recognises alumni who have distinguished themselves through their work and have done the Institute proud. The Distinguished Alumnus Awards have been instituted for this purpose. In addition to this, IIT Bombay has instituted the Distinguished Service awards for alumni who have rendered special services to the cause of the betterment of the institute. The institute also involves the alumni in its educational and research activities, whenever possible, by

inviting them to participate on its advisory boards as visiting faculty or as guest speakers. Our alumni has responded whole-heartedly by supporting the institute with the most generous endowments, leading to the establishment of schools, laboratories, scholarships, chairs and various infrastructure developments.

Recreational/Extra Curricular activities

The annual Science & Technology festival of IIT Bombay, Techfest, which was started in 1998, is held in the month of December every year and is the largest of its kind in Asia. It comprises various events like competitions, exhibits and talks from guest speakers from around the world. Techfest 2009 was also the first event of its kind in India to conduct its events in other countries.

Apart from these festivals, various other engineering streams based festivals are also being organised to motivate students towards Science and Technology. These include Radiance (Mechanical Engineering), Zephyr (Aerospace Engineering), AZeotropy (Chemical Engineering), Padarth (Metallurgy and Material Science Engineering), Aagomani (Electrical Engineering), GeneRations (Biosciences & Bioengineering) and Aakaar (Civil Engineering).

Cultural activities like dramatics, Speaking, Literary Arts, Music and Fine Arts also mark an important feature in the life of a student of IIT Bombay. Speaking and Literary Arts have always been very popular in the student community with students actively participating in quizzing, writing and debating activities. IIT Bombay has frequently won the prestigious National Law School Parliamentary Debating Tournament.

The annual cultural festival Mood Indigo, usually held in the month of December is the best event hosted by any student body and the largest of its kind in Asia. The most attractive feature of this 4-day event are the influential personalities who have graced the festival like Aamir Khan, Sir Mark Tully, Sachin Tendulkar, Porcupine Tree, Simple Plan, Mike Portnoy and many more. The organization is known for holding the best cultural competitions, games and musical concerts to draw out the best talent in the country.

Location and Accessibility

IIT Bombay is located at Powai, which is an eastern suburb in the North-Eastern part of Mumbai.

[Mumbai](#) is in the form of a long narrow island, almost a peninsula, thrusting south wards into the Arabian Sea. It can be broadly divided into four zones.

South Bombay (Colaba, CST, Fort, Churchgate, Nariman Point etc.)

Central Bombay (Dadar, Bombay Central, Worli etc)

The Western suburbs (Bandra, Juhu, Andheri, Borivali etc)

The Eastern Suburbs (Kurla, Chembur, Ghatkopar, Mulund, Kanjur Marg, Vikhroli etc.)

There is also New Bombay (Vashi, Turbhe etc.) across Thane Creek on the mainland.

Public Transport

Mumbai has one of the most efficient and reliable public transport network. One can travel by Autorickshaws / Taxis to reach IIT from the nearest stations (Autorickshaws, however do not go further south than Sion and Bandra). For longer distance, you can use either the BEST Bus Network or the Mumbai [Local train System](#).

Suburban Railway Transport

Those coming by Central Railway Suburban train will have to get down at Mulund, Bhandup, Kanjur Marg, Vikhroli or Ghatkopar which are the nearest stations from IITB. If you are coming by the Western Railway Suburban train you will have to get down at Andheri, Bandra, Goregoan. BEST Bus are available as below:

NAME OF PLACE	BUS NUMBERS
Mulund(W)	307, 346, 425, 396, 398, 460, 422, 424, 461
Bhandup(W)	

Kanjur Marg(W)	
Vikhroli(W)	392,382,337
Ghatkopar(W)	392,382.337
Borivali(E)	461, 398, L1
Goregaon(E)	460,489,424
Jogeshwari(E)	461,445
Andheri(E)	396,336,392,307
Bandra(E)	422,424

AIRPORTS

International flights land at Chhtrapati Shivaji Maharaj International Airport, which is about 7 kms from IIT. The Domestic Airport- Santa Cruz is about 10 kms. Prepaid taxis are available at the Airports. Autorickshaws are also available for IIT.

collage name	Branch	Parent Branch	STATE	Cam pus	priori ty_c amp us	proximity	Plac ement
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IIT BOMBAY	COMPUTER SCIENCE & ENGINEERING	COMPUTER SCIENCE & ENGINEERING	Maharashtra	100			5500000
IIT BOMBAY	ELECTRICAL ENGINEERING	ELECTRICAL ENGINEERING	Maharashtra	100			4000000
IIT BOMBAY	CIVIL ENGINEERING	CIVIL ENGINEERING	Maharashtra	100			2500000
IIT BOMBAY	MECHANICAL ENGINEERING	MECHANICAL ENGINEERING	Maharashtra	100			2400000
IIT BOMBAY	AEROSPACE ENGINEERING	MECHANICAL ENGINEERING	Maharashtra	100			2100000
IIT BOMBAY	CHEMICAL ENGINEERING	MECHANICAL ENGINEERING	Maharashtra	100			2100000
IIT BOMBAY	ECONOMICS	ECONOMICS	Maharashtra	100			2100000
IIT BOMBAY	ENGINEERING PHYSICS	BASIC SCIENCES	Maharashtra	100			2100000
IIT BOMBAY	METALLURGICAL & MATERIALS ENGINEERING	METALLURGICAL ENGINEERING	Maharashtra	100			2000000

The **Indian Institute of Technology Bombay (IIT Bombay)** is a public research university and [technical institute](#) in Powai, Mumbai, Maharashtra, India.

IIT Bombay was founded in 1958.^[7] In 1961, the Parliament decreed IITs as [Institutes of National Importance](#).^[8] A committee formed by the [Government of India](#) recommended the establishment of four higher institutes of technology to set the direction for the development of technical education in the country in 1946. Planning

began in 1957 and the first batch of 100 students was admitted in 1958.^[8] Since its establishment in Powai, the institute has physically expanded to include more than 584 major buildings with a combined area of more than 2.2 square kilometers.

IIT Bombay is known for its 4-year, 5-year & 2-year programmes for which the entrance is through the [Joint Entrance Examinations](#) (JEE), [Joint Admission Test for Masters](#) (JAM) and [Graduate Aptitude Test in Engineering](#) (GATE). Degrees offered in the university include the four-year [Bachelor of Technology](#) (B.Tech.), the two- or three-year [Master of Technology](#) (M.Tech.), the four-year [Bachelor of Science](#) (B.S.), the two-year [Master of Science](#) (M.Sc.) and the five-year Inter-Disciplinary Dual-Degree Programme (IDDDP) among many others. It also has a comprehensive graduate program offering doctoral degrees in science, technology, engineering and mathematics.^[8] It currently has a total of 15 academic departments, 20 additional education centres, a school of excellence and four interdisciplinary programmes including a management programme and [industrial design programmes](#).^[9]

History^[edit]

IIT Bombay was the second [Indian Institute of Technology](#) to be established in 1958 with assistance from [UNESCO](#) and with funds contributed by the [Soviet Union](#).^[10] UNESCO agreed to provide equipment and technical experts mainly from the Soviet Union, while the Government of India accepted the responsibility for all other expenses including the cost of the building project and recurring expenses. The site chosen for the institute was [Powai](#) with an area of 550 acres (2.2 km²) which was given by the then [Bombay State](#) Government. While construction was being completed, the first academic session of the institute opened on 25 July 1958, in its temporary home at the Synthetic and Art Silk Mills Research Association (SASMIRA) building in [Worli](#) with 100 students.^{[11][12]} The following is the present position regarding the assistance received from UNESCO under the UN Expanded Programme of Technical Assistance:

- Equipment costing Rs.57,35,000 has so far been received (USSR—Rs.55,50,000; UK—Rs.1,50,000; USA—Rs.18,000 and Germany—Rs.19,000)
- 12 Professors (10 Russians, 1 American and 1 Yugoslavian) and 3 Russians Translators are working at the Institution.
- For advanced training in USSR, 4 Indian teachers were deputed in 1958 and 6 more teachers were selected.^[13]

These students were selected from over 3,400 applicants for admission to the first year undergraduate engineering programmes of Aerospace, Chemical, Civil, Computer, Electrical, Engineering Physics, Energy, Mechanical, Metallurgical Engineering, and MSc Chemistry.^[citation needed] One of the main objectives of establishing the institute was to develop facilities for studies in a variety of specialized engineering and technological sciences. The need for establishing adequate facilities for postgraduate studies and research was kept uppermost in mind in the founding years. While the institute was functioning provisionally at Worli, an effort was made to expedite the progress of the building project at its permanent location and [Jawaharlal Nehru](#) laid the foundation stone of the Institute at Powai on 10 March 1959.^{[12][14]}

On July 9, 2018, IIT Bombay was conferred the status of [Institute of Eminence](#) by the Ministry of Human Resources & Development, along with 5 other institutes in India which would provide it additional autonomy and government funds.^{[15][16]}

Campus^[edit]

The IIT Bombay campus, having an area of about 545 acres, is located at Powai, in East [Mumbai](#), between the [Vihar](#) and [Powai](#) lakes. The campus is divided into clusters of buildings. The academic area chiefly comprises the main building, various departmental annexes and auditoria. All department annexes are connected by a corridor named *Infinite Corridor*. Beyond the Convocation Hall lie most of the hostels. There are a total of 18 hostels, of which two hostels (Hostels 10 and 11) and a wing of the newly constructed hostel (Hostel 15) are for female students.

Due to its proximity to the [Sanjay Gandhi National Park](#), the campus has significant green cover and is mostly untouched by the pollution of the rest of the city. The proximity of the campus to the national park has also led to occasional sightings of [leopards](#) and [mugger crocodiles](#) along the banks of the Powai lake. Sometimes they stray into the campus in search of prey.^[17]

The campus has also recorded over 200 species of birds including [Indian grey hornbill](#), [Indian pitta](#), [Vigors's sunbird](#), [Ashy prinia](#), [Indian paradise flycatcher](#), [Rufous woodpecker](#), and [Oriental darter](#).^[18]

The institute has two swimming pools; [football](#), [hockey](#) and [cricket](#) grounds; and [tennis](#), [basketball](#), [squash](#) and [volleyball](#) courts. It also has a Students' Activity Center (SAC) for various cultural and other extracurricular activities. In addition to

these facilities, the campus also houses two high schools, one of which is a [Kendriya Vidyalaya](#) and the other is called IIT Campus School.^[19]

Organization and administration^[edit]

Governance^[edit]

At the institutional level, IIT Bombay is governed by a [Board of Governors](#)^[20] with its chairman nominated by the Visitor (the [President of India](#)) guided by the [IIT Council](#); the [Director](#) as a member; the [Registrar](#) as secretary.^[21] Besides this, there are four persons having specialized knowledge or practical experience in respect of education, engineering or science nominated by the council. Two professors are nominated by the Senate. Additionally, one technologist or industrialist of repute is nominated by the government of each of the States of Maharashtra, Madhya Pradesh and Gujarat.^[22]

For all academic matters, the Senate is the authority having control and responsibility for the maintenance of standards of instruction, education and examinations and all other allied academic matters. The Senate is constituted of all the professors of the institute, a few nominated members and the director, appointed by MHRD for five years, the executive head of the institute is the chairman.

The key people in the execution of the institute's activities are the director and two deputy directors (Academic & Infrastructural Affairs and Finance & External Affairs) who are assisted by seven [Deans](#) (Infrastructure Planning & Support, Research & Development, Academic Programmes, Students Affairs, Alumni & Corporate Relations, Faculty Affairs and International Relations) and the Heads of the Departments, Centres and Schools.^[23] The other administrative functions are managed by the Registrar, with senior administrative officers being assigned for specific areas such as Estate Management, Materials Management, Personnel Management, Finance and Accounts, and Academic Affairs.

The Institute Advisory Council is a non-statutory body comprising eminent personalities from business, industry and academia, which reviews and makes suggestions on long-term policies and short-term goals.

Academic Office[edit]

The Academic Office of the institute exists to facilitate, initiate and co-ordinate the academic work of the institute, particularly the teaching and assessment of students. It acts as the repository of grades and academic records of all students, both past and present. It provides administrative support to the Senate, which is the highest academic body of the institute.

The head of the Academic Office is the dean of academic programmes, who is a senior professor of the institute. The Dean is helped by a permanent administrative set-up headed by a deputy registrar (education). The Academic Office closely interacts with the dean of student affairs (DoSA), who looks after all non-academic problems of students. The DoSA, as the ex-officio president of the Student Gymkhana, coordinates various co-curricular activities of students.^[24]

Departments, centres, and schools[edit]

Lecture hall complex

IIT Bombay has 15 departments, 36 multi-disciplinary centres, 3 schools of excellence and 4 interdisciplinary programs.^[25]

The academic departments in IIT Bombay include the following:

1. [Aerospace Engineering](#)
2. [Biosciences and Bioengineering](#)
3. [Chemical Engineering](#)
4. [Chemistry](#)
5. [Civil Engineering](#)
6. [Computer Science & Engineering](#)
7. [Earth Sciences](#)
8. [Electrical Engineering](#)
9. [Energy Science and Engineering](#)
10. [Environmental Science and Engineering \(ESED\)](#)
11. [Humanities & Social Science](#)
12. [Mathematics](#)
13. [Mechanical Engineering](#)

14. [Metallurgical Engineering & Materials Science](#)

15. [Physics](#)

The following multi-disciplinary centres are located in IIT Bombay:

- Application Software Centre (ASC)
- [Biomedical Engineering and Technology \(Incubation\) Centre \(BETiC\)](#)
- Centre for Research in Nanotechnology and Science (CRNTS)
- Centre for Aerospace Systems Design and Engineering (CASDE)
- Computer Centre (CC)
- Centre for Computational Engineering and Science
- Centre for Distance Engineering Education Programme (CDEEP)
- Centre of Excellence in Nanoelectronics
- Centre for Excellence in Steel Technology (CEST)
- Centre of Excellence in Oil, Gas and Energy (CoE-OGE)
- Ashank Desai Centre for Policy Studies (CPS)
- Centre for Machine Intelligence and Data Science (C-MInDS)
- Centre of Studies in Resources Engineering (CSRE)
- Centre for Technology Alternatives for Rural Areas (CTARA)
- Centre for Formal Design and Verification of Software (CFDVS)
- Centre of Propulsion Technology (CoPT)
- Centre for Urban Science and Engineering (C-USE)
- Centre for Liberal Education (CLE)
- Forbes Marshall Energy Efficiency Laboratory
- Geospatial Information Science and Engineering
- [IITB-Monash Research Academy](#)
- [Koita Centre for Digital Health \(KCDH\)](#)
- National Centre for Aerospace Innovation and Research (NCAIR)
- National Centre of Excellence in Carbon Capture and Utilization (NCoE-CCU)
- National Center of Excellence in Technology for Internal Security (NCETIS)
- National Centre for Mathematics (NCM)
- National Centre for Photovoltaic Research and Education (NCPRE)
- National Mission on Education Through ICT
- National Solar Thermal Research, Testing and Simulation Technology
- Parimal and Pramod Chaudhari Centre for Learning and Teaching (PPCCLT)
- Sophisticated Analytical Instrument Facility (SAIF)
- Tata Centre for Technology and Design (TCTD)
- Tata Teleservices - IITB Centre for Excellence in Telecommunication
- Technocraft Centre for Applied Artificial Intelligence (TCAAI)
- Wadhwani Research Centre for Bioengineering (WRCB)

- Water Innovation Centre: Technology, Research and Education

Additional Centre:

- IITB-WashU Aerosol and Air Quality Research Center

Schools of excellence in IIT Bombay are:

- Desai Sethi School of Entrepreneurship (DSSE)
- IDC School of Design
- Shailesh J Mehta School of Management

In addition to the above, IIT Bombay also offers [Inter-disciplinary programmes](#):

- Climate Studies
- Educational Technology
- Industrial Engineering and Operations Research (IEOR)
- Systems and Control Engineering

Academics[\[edit\]](#)

Programmes[\[edit\]](#)

IIT Bombay offers a wide range of educational programmes^[26] including [physical sciences](#), [engineering](#), [designs](#), [humanities](#) and [social sciences](#) such as [economics](#), [English](#), [philosophy](#), [psychology](#) and [sociology](#) and [management studies](#) with a primary focus on engineering.^[27] Over the years, the institute has also created a niche for its innovative short-term courses through continuing education and [distance education](#) programmes.^[28] The university is a member of Links to Asia by Organizing Traineeship and Student Exchange (LAOTSE), an international network of leading universities in Europe and Asia exchanging students and senior scholars.

The institute conducts educational programmes leading to the degree of Bachelor of Technology (B.Tech.), Bachelor of Sciences (B.S.), Dual Degree (B.Tech. and M.Tech. in 5 years), Master of Science (MSc.), Master of Technology (M.Tech.), Bachelor of Design (B.Des.), Master of Design (M.Des.), Master of Business Administration (MBA), formerly Master of Management, Master of Philosophy (M.Phil.) and Doctor of Philosophy (PhD.) in various subject domains.

Every year, IIT Bombay awards degrees, B.Tech., M.Tech., Dual Degree (B.Tech. and M.Tech.), M.Mgmt, MSc and Ph.D. to more than 1,000 students. The undergraduate students at IIT Bombay are selected through the [Joint Entrance Examination](#) of the IITs. The graduate students are selected through [Joint Admission Test for Masters](#) (JAM) and [Graduate Aptitude Test in Engineering](#) (GATE) conducted by IIT's and IISc on behalf of MHRD [Ministry of Human Resource Development]. At a given time, the campus is home to more than 6,000 people: students, professors, and non-academic staffs.

In 2015 the National Virtual Academy for Indian Agriculture launched a free online agriculture course in collaboration with [ICRISAT](#) Hyderabad and IIT Bombay.^[29] From July 2016, IIT Bombay is planning to offer a four-year undergraduate programme in economics.^[30]

In April 2015, IIT Bombay launched the first U.S.-India joint [EMBA](#) program alongside [Washington University in St. Louis](#).^[31]

Rankings

[\[edit\]](#)

[University and college rankings](#)

General – international

QS (World) (2023) ^[32]	17
	2

QS (Asia) (2023) ^[33]	40
--	----

General – India

NIRF (Overall) (2023) ^[34]	4
---	---

NIRF (Research) (2023)^[35] 4

QS (India) (2020)^[36] 1

Engineering – India

NIRF (2023)^[37] 3

India Today (2022)^[38] 2

Government colleges:

Outlook India (2022)^[39] 3

Business/Management – India

NIRF (2023)^[40] 10

Internationally, IIT Bombay was ranked 172 in the [QS World University Rankings of 2023](#)^[32] and 40th in Asia.^[33]

IIT Bombay was also ranked 4th in the overall category,^[34] 4th among research institutions,^[35] 3rd among engineering colleges^[37] and 10th among management schools^[40] in India by the [National Institutional Ranking Framework](#) (NIRF) in 2023. [Outlook India](#) ranked IIT Bombay 3rd among government engineering colleges in 2022.^[39] IIT Bombay was ranked 1st in the [QS India Rankings](#) of 2020.^[36] In, [India Today](#) Best engineering colleges 2022, IIT Bombay was ranked 2nd.^[38]

Development activities

The Shailesh J. Mehta School of Management (SJMSOM)

Faculty members from IIT Bombay undertake industry-sponsored research and consultancy projects that are made available through the institute. These are funded by various national agencies like the [Department of Science and Technology](#), [Department of Electronics](#), [Department of Space](#), [Aeronautical Development Agency](#), [Department of Atomic Energy](#), and [Oil and Natural Gas Commission](#) (ONGC). Many are also working on projects of national importance. A few projects are also being funded by international agencies. Typically in one year, there are about 400 on-going sponsored projects. The sponsored research has ushered in intense research activity leading to the formation of active research groups and has helped in the creation of modern research facilities in key areas.^[41]

The office of the Dean (R&D) provides the necessary liaison with industry and sponsoring agencies. The office helps industry to identify faculty expertise and institutional facilities, and assists faculty in identifying industry problems.^[42]

There are also a number of central facilities such as the Central Library, Central Workshop, and Printing Press. Many new research facilities have been acquired or developed in the last few years. One of the most important of them is the Computer Centre which started functioning in 1986 with facilities which have been continuously updated. The Computer Aided Design Centre with its own minicomputers and workstations, supplemented by additional computing facilities, caters to CAD activity in Chemical Engineering and Metallurgical Engineering. Research groups like VLSI Design, CAD/CAM also have computing facilities which are accessible to other departments for development activities. Recently, work on developing medical implants has been initiated. The [OrthoCAD Network Research Cell](#) was established in 2007 to jump-start indigenous research and development activities in orthopedic reconstruction systems. Important experimental facilities set up by various departments include laboratories for robotics, biotechnology, microelectronics, microprocessor applications, telematics, remote sensing, low-temperature physics, and aerodynamics. Earlier IIT Bombay announced the online classes for the batch 2020-21 from August 10. A fund raising campaign was launched to help the students in need. The batch of 1994 of IIT Bombay donated Rs. 1.25 crores to help the students and provide them with laptops and internet connections which will be

helpful for the online classes. The director of IIT Bombay thanked the alumni members for their constant support towards their college.^[43]

Student life^[edit]

Cultural and non-academic activities^[edit]

Main articles: [Techfest](#) and [Mood Indigo \(festival\)](#)

The student's Gymkhana^[44] is the parent body of all student councils and institute bodies responsible for organizing student activities and fests around the year. The major councils under Gymkhana include Hostel Affairs Council, Undergraduate Academic Council, Postgraduate Academic Council, Sports Council, Tech Council and Cultural Council. Apart from councils bodies like Mood Indigo, Techfest, Entrepreneurship Cell, Student Alumni Relationship Cell, etc.^[44] also come under the student's Gymkhana. The heads of all councils and institute bodies are elected annually for a term of one year.^[45]

The annual Science & Technology festival of IIT Bombay, [Techfest](#),^[46] which was started in 1998,^[47] is held in December every year and is Asia's largest Science and Technology festival.^[48]

The [Entrepreneurship Cell](#) of IIT Bombay (also known as E-Cell, IITB), started in 1998,^[49] organizes several activities throughout the year to promote entrepreneurship. [Eureka!](#) is Asia's largest business model competition conducted by E-Cell, IITB and receives participation from more than 12,500 startups.^[50] E-Summit is a two-day entrepreneurship conclave organized in the campus of IIT Bombay by E-Cell to bring together all the stakeholders of the entrepreneurship ecosystem.^[51]

The annual cultural festival [Mood Indigo](#),^[52] usually held in December is an event hosted by the student body and is Asia's largest college cultural festival.^[53] The most attractive feature of this 4-day event is the influential personalities who have graced the festival like [R D Burman](#), [Aamir Khan](#), Sir [Mark Tully](#), [Sachin Tendulkar](#), [Porcupine Tree](#),^[54] [Simple Plan](#),^[55] [Mike Portnoy](#)^[56] and many more.

These college festivals are organised, financially managed and conducted entirely by the students of this institute. All these festivals and organisations are sponsored by private enterprise.^{[57][52]}

Abhyuday, the social body of IIT Bombay also hosts one of its kind two-day social fest started in 2013 to provide a link between the real-life problems faced by the people to the students who wish to bring about a change society. The two-day fest is home to Action Plan - a social entrepreneurship competition, movie screenings, workshops and events on varied social issues. Many eminent personalities and social workers like [Sonam Wangchuk](#), [Dia Mirza](#), [Ashish Vidyarthi](#), [Tukaram Munde](#) and such have graced the social fest since its start.^[58]

Apart from these festivals, various other engineering streams based festivals are also being organised to motivate students towards Science and Technology. These include Radiance (Mechanical Engineering), Zephyr (Aerospace Engineering), AZeotropy^[59] (Chemical Engineering), Padarth(Metallurgy and Material Science Engineering), IMPULSE (Electrical Engineering) and recently, Aakaar (Civil Engineering).

The institute has music clubs "Symphony" and "Roots" which pertain to western and Indian music respectively. It also has an [LGBT](#) alliance club called "Saathi".^{[60][61]} The institute has an active [NCC](#) unit, the *2 Maharashtra Engineer Regiment*^[62] which is an attachment of the [Bombay Sappers](#).

IIT Bombay's [Diamond Jubilee](#) was held in 2018, with Prime Minister [Narendra Modi](#) attending as the chief guest of the [convocation](#) function.^[63]

Notable alumni and faculty members^[edit]

Main article: [List of Indian Institute of Technology Bombay people](#)

- [Bhavish Aggarwal](#) (co-founder of Ola Cabs)
- [Jairam Ramesh](#) (member of Rajya Sabha)
- [K. Sivan](#) (former chairman of ISRO)
- [Nandan Nilekani](#) (non - executive chairman, Infosys)
- [Nitesh Tiwari](#) (film director, screenwriter, lyricist)
- [Parag Agrawal](#) (former CEO of twitter)
- [Raghu Raghuram](#) (CEO, VMware)
- [Manohar Parrikar](#) (former Union Minister Of Defense and Ex CM, Goa)
- [Vipul Goyal](#) (stand up comedian)

Indian Institute of Technology Bhubaneswar

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	Indian Institute of Technology Bhubaneswar (IITBBS), Argul, Jatni,Khurda, PIN: 752050
Contact Person For Admission:	Dr. Sailendra Narayan Routray
Designation:	Assistant Registrar (Academics)
Email:	ar.acad@iitbbs.ac.in
Alternate Email:	office.academic@iitbbs.ac.in
Phone Nos:	91-674-7134578,0674-713-4461,0674-713-4462
Fax No:	
Mobile No.:	

About the Institute

IIT Bhubaneswar was established in 2008 with a mission to bridge the gap between education, research and industries. It offers programmes like B.Tech, M.Tech, M.Sc and Ph.D in various disciplines. The Schools at IIT Bhubaneswar are equipped with state of the art equipment / facilities / laboratories and its faculty members are involved in a broad range of research areas and industrial consultancy. The Institute has collaborations with many reputed Universities, Research Organizations and Industries.

Currently, the Institute has total 1149 students in various branches of Bachelor of Technology programme and Dual Degree Programme viz Civil Engineering, Computer Science & Engineering, Electrical Engineering, Mechanical Engineering and Metallurgical & Materials Engineering along with 178 - M. Sc., 388 - M. Tech., 344 - Ph. D. and 6 postdoctoral students, with an overall total of 2065 students. In the Academic Year 2020-21, the Institute is offering following B. Tech. & Dual Degree Programmes.

Sl. No.	Programmes offered	Student Strength
---------	--------------------	------------------

1	4 year B. Tech in Civil Engineering (CE)	66
2	4 year B. Tech in Computer Science & Engineering (CSE)	68
3	4 year B. Tech in Electrical Engineering (EE)	70
4	4 year B. Tech in Mechanical Engineering (ME)	70
5	4 year B. Tech in Metallurgical and Materials Engineering (MME)	29
6	4 year B. Tech in Electronics & Communication Engineering (ECE)	52
7	5 year Dual Degree programme (B. Tech in Mechanical Engineering and M. Tech. in Mechanical System Design)	15
8	5 year Dual Degree programme (B. Tech in Mechanical Engineering and M. Tech. in Thermal Science & Engineering)	15
9	5 year Dual Degree programme (B. Tech. in Mechanical Engineering and M.Tech. in Manufacturing Engineering)	15
10	5 year Dual Degree programme (B. Tech in Civil Engineering and M. Tech. in Structural Engineering)	13
11	5 year Dual Degree programme (B. Tech in Civil Engineering and M. Tech. in Transportation Engineering)	13
12	5 year Dual Degree programme (B.Tech. in Civil Engineering and M.Tech. in Environmental Engineering)	13
13	5 year Dual Degree programme (B.Tech. in Electrical Engineering and M.Tech. in Power Electronics and Drives)	12
14	5 year Dual Degree programme (B.Tech. and M.Tech. in Computer Science and Engineering)	12

15 5 year Dual Degree programme (B.Tech. in Metallurgical and Materials Eng. and M.Tech. in Metallurgical and Materials Engineering.)

12

The Institute promotes a border-less interdisciplinary academic environment to encourage the academic staff and students to work together through the concept of Schools. Currently, the Institute has School of Basic Sciences; School of Earth, Ocean and Climate Sciences; School of Electrical Sciences; School of Humanities, Social Sciences and Management; School of Infrastructure; School of Mechanical Sciences and School of Mineral, Metallurgical and Materials Engineering.

Fee Structure

INDIAN INSTITUTE OF TECHNOLOGY BHUBANESWAR

Fee Structure applicable for B.Tech. & Dual Degree students taking admission starting from Academic Year 2020-2021

A	Caution Money	Fee details	Amount (INR)
		Regular	
		Institute Fee (Refundable)	2,500
		Library (Refundable)	2,500
		Hostel (Refundable)	4,000
		Mess (Refundable)	3,000
		Institute Amenities Security (Refundable)	----
		Total :	12,000/-

B	One Time Fee (at the time of admission only)	Statutory Fee	1,000
		Alumni Subscription	500
		Medical Examination	200
		Student's Welfare Fund	200
		Hostel Admission Fee	2,000
		Identity Card Fees	100
		Provisional Certificates Fees	200
		Grade Card Fees	500
		Admission Fees	200
		Career Development Fee	500
		Library Fees	500
		Total :	5,900/-
C	Semester Fee	Tuition Fee *#	1,00,00
		Registration	200

		Examination	500
		Students Amenities	600
		Internet Connectivity	500
		Laboratory Contingency	1,000
		Hostel Seat Rent	500
		Electricity & Water Charges	1,500
		Student Benefit Fund	200
		Gymkhana Fee	1500
		Total :	1,06,5 00/-
D	Annual Fees	Medical Insurance Fees	1500
		Total :	1,500/-
E	Hostel Charges (Per Semester)	Hostel Mess Advance	14,000
		Hostel Overhead Charges	8,500
		Total :	22,500 /-

Grand Total Fees: [New Admission for A.Y. 2019-20 Autumn Semester (1 st Semester)]	for GEN/OBC Category (A+B+C+D+E)	1,48,400/-
	for SC/ST/PwD Category* (A+B+C+D+E)	48,400/-
Spring Semester Fee (2 nd , 4 th , 6 th & 8 th)	for GEN/OBC Category (C+E)	1,29,000/-
	(SC/ST/PwD Category) (C+E]	29,000/-
Autumn Semester Fee (3 rd , 5 th & 7 th)	for GEN/OBC Category (C+D+E)	1,30,500/-
	(SC/ST/PwD Category) [C+D+E]	30,500/-

* 100% Tuition Fee waiver for SC/ST/PwD students

· Full remission of the Fee for most economically backward students (whose family income is less than INR 1.0 lakh per annum)

· Remission of 2/3rd of the fee to other economically backward students (whose family income is between INR 1.0 lakh to INR 5.0 lakh per annum)

For Foreign Nationals, Tuition Fee will be charged @ INR 6.0 lakhs per annum.

N.B. The above fees are subject to revision from time to time.

Academic Structure

The Institute presently offers the following programmes:

- 4 year B. Tech. Degree programme
- 5 year Dual Degree programme
- M. Tech. Programme
- Joint M. Sc.-Ph. D. Programme
- Ph. D. Programme

The credit based curriculum for B. Tech. programme is spread over 8-semesters and includes summer internship, as well as research projects. For evaluation in a subject, the Institute follows a seven-point grading system with letter grades and the corresponding grade points per credit. The Cumulative Grade Point Average (CGPA) is computed at the end of each semester. The CGPA obtained by a student reflects his/her performance up to and including that semester.

Curriculum and Pedagogy

IITBBS offers holistic education which is broad based. The pedagogy emphasizes strong technical education supported by intense laboratory practice and fosters creativity, innovations, human excellence amongst students. While imparting strong and vibrant education in technology, the courses provide significant amount of breadth through courses such as General Studies and Current Affairs, Entrepreneurship and Small Business Management and Odissi Dance in addition to some latest courses like Bigdata Analytics, Cyber Security and Cloud Computing etc. The Institute permits students to register for select Video Courses (National Programme on Technology Enhanced Learning) & Massive Open Online Courses (MOOCs) and offers a variety of electives to the students to choose from. The Institute is equipped with facilities including e-Classrooms to support ICT based enhancements to the learning environment.

Rules For Change Branch

A student admitted to a particular branch of the B. Tech. Course will normally continue studying in that branch till completion. However the Institute may permit a limited number of students to change from one branch to another based on CGPA, not lower than 8.50, at the end of second semester after completion of prescribed credits in their first attempts without having had to pass any course requirement in the supplementary examination and/or summer quarter.

Faculty

IIT Bhubaneswar has versatile group of faculty members both from India and abroad (as visiting Professors). At present, the faculty strength stands 144 comprising of 17 Professors, 1 MGM Chair Professor, 31 Associate Professors, 94 Assistant Professors apart from Adjunct faculty members. All faculty members hold Ph. D. degree from reputed national and international institutions and many of them have international postdoctoral research experiences. The basic focus of the faculty members are quality teaching, research and technology development. Several research and consultancy projects have been awarded to the faculty members from the sponsoring agencies such as CSIR, DST, DBT, DRDO, ISRO, DEIT etc. They are also actively involved in publishing papers, attending the international conferences/workshops/ symposium and chairing session of the conferences.

Facilities

IIT Bhubaneswar is presently completely operating from its permanent campus at Arugul, Khurda. All B. Tech., M. Tech. and M. Sc. Classes are being held at the permanent campus. In addition, the students are also able to access the facilities of Central Tool Room and Training Center, Central Institute of Plastics Engineering & Technology and Institute of Minerals and Materials Technology for hands-on training. The academic campus is Wi-Fi enabled and equipped with class rooms having audio-visual aid, well- equipped laboratories, library, high bandwidth internet and video conferencing facility.

Student Life at Institute

IIT Bhubaneswar, fully operating from its permanent campus at Argul, Jatni, provides the right ambience for personal and professional growth of the students. It brings out academic brilliance by providing holistic education through various activities. Accommodation with mess and other facilities are available for both girls and boys in the hostels provided by the Institute, in its permanent campus at Argul, Jatni, Khurda. The hostels have 24x7 internet facility, gymnasium, common room, and other recreational facilities. Medical facility is provided round the clock with emergency care to the students both in the campus and in the hostels. The students requiring tertiary health care are referred to the hospitals at Bhubaneswar city. A counseling cell with a psychologist-cum-counselor and student guides also assist the students.

IIT Bhubaneswar's Counselling Service Team (CST) is marching ahead in its mission to facilitate the personal, academic, professional and social growth of the students, and to equip them with the skills to meet up with the variety of challenges in life. The team creates a safe-space for students to discuss their issues & challenges in a secure, confidential and private environment. Since members of the team are students themselves, they understand the difficulties faced by the *newbie*. This mentoring by senior students of the CST headed by faculty members creates a culture that strengthens the inter-personal bonds between the students. There are 29 student guides and each is entrusted with the responsibility of 8-10 freshers.

Financial Assistance

I. Scholarships / Financial Assistance (Provided by the Institute) / Interest-Free-Loans

- Merit-Cum-Means Scholarship (MCM): The Institute awards MCM Scholarship to eligible students (whose parental gross annual income does not exceed Rs.4.5 lakh per annum) not more than 25% of the students admitted to the Programme each year. It includes reimbursement of tuition fees and a scholarship of Rs.1000/- per month for 12 months.
- Free Studentship: The Institute awards Free Studentship to eligible students. Not more than 10% of the students admitted to the Programme each year. It includes reimbursement of tuition fee.
- Financial Assistance: All SC and ST students are exempted from payment of tuition fees. The SC and ST students whose parental annual income is below Rs.4.5 lakh are eligible for Financial Assistantship. Details are available in the Institute website.
- Other Scholarships (Provided by Govt. of India) : Central Sector Scholarship Scheme of "Top Class Education for Schedule Caste (SC) Students", Central Sector Scholarship Scheme of "Top Class Education for Schedule Tribe (ST) Students", Scholarship for Students with Physically disability
- Interest-Free-Loans : The Institute has tied up with State Bank of India in order to provide the students interest-free-loan under the Vidyalaxmi Scheme for payment of tuition fees subject to the conditions and meeting the eligibility criteria.

Training & Placement

Professionalism combined with specific skill-set are high in demand in the competitive global job market. The mission of Career Development Cell (CDC) of IIT Bhubaneswar is to foster excellence in career development and promote strong partnership with employers so that all the graduating students get job opportunities through campus placements. The corporate interface and relations stand high on the agenda of CDC of IIT Bhubaneswar. The CDC enjoys unflinching support and constant patronage of industry and institutions. IIT Bhubaneswar has been successful in adding more and more companies to the list of its recruiters.

CDC offers a wide range of portfolios which include empowering students to explore, define and realize their career goals. The CDC also engages in one-to-one counselling sessions, consultations, throughout the career planning process, and assistance with goal-setting and goal achievement through a variety of career exploration activities. The ultimate aim is to provide lifetime tools and skills for professional development, job search success, and career satisfaction, supporting the students in shaping and managing their careers by building key ingredients required for a student to be a complete professional.

Campus placements of 2018-19 has been eventful in terms of many new recruiters visiting IIT BBS offering R&D profiles. Also the placements 2018-19 has seen majority of the previous recruiters being repeated this year too, indicating faith/trust in the quality of our students.

Industry And Alumni Relations

The Institute has collaborative activities with many universities abroad. The U.G. students do visit many foreign Universities for their internship. The P.G. students do their project work under joint guidance of faculty of IIT Bhubaneswar & foreign Universities. MoU has been signed with many Universities for research collaboration, faculty and student exchange. As a result of partnership understanding set by IIT Bhubaneswar, active academic interaction in research and teaching is going on between our students/faculty members and their counterparts in the following universities:

- University of Warwick, UK
- University of Southampton, UK
- University of Massachusetts, Dartmouth, USA
- University of Western Ontario, CANADA
- McGill University, CANADA
- University of New York, Buffalo, USA
- University of North Dakota, USA

Recreational/Extra Curricular activities

IITBBS provides various opportunities for students to get involved in co-curricular and extra curricular activities such as robotics, idea pool, code marathon, athletics, sports, film making,

photography, yoga, and odissi dance etc. Some of these are part of the Extra Academic Activity (EAA) which is a part of the B. Tech. curriculum. The Institute has also developed a well-equipped gymnasium, volleyball court, cricket pitch, basketball court, badminton court and football ground at the permanent campus. Every year, our students take part in the inter-IIT sports. Moreover, the Students' Gymkhana is a student body, fostering all student activities at IIT Bhubaneswar. There are three major events i.e. Wissenaire, Alma Fiesta and E-summit. Wissenaire, the annual tech fest of the Institute is one of the finest techno-management festivals in this part of the country instilling the students with a spirit of innovation, entrepreneurship and a thirst for discovery. With attendance from all over the nation, its workshops, events, competitions and performances are a big success. Alma Fiesta, the annual socio-cultural festival of the Institute, is one of the biggest student events of the state. It creates a space for social awareness, promotion of culture & tradition and channelizes the youth energy and enthusiasm in a positive and constructive direction. Alma Fiesta plays host to an array of events, competitions, performances and workshops and is widely attended by students from across the nation. E-summit, as a culture of IIT Bhubaneswar, has proved its worth in depleting the Chasm that exists between Entrepreneurship and management. It is the stage for future Industry leaders and Entrepreneurs to exercise their skills, putting forward the Theme, "Fostering a passel of innovators ". IIT Bhubaneswar made a remarkable attempt to take students into the Entrepreneurial world and encourage them to be Entrepreneurs.

IIT Bhubaneswar

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Tools

Coordinates:  20°18'10.9434"N 85°49'26.45"E

From Wikipedia, the free encyclopedia



Type	Public technical university
Established	22 July 2008; 15 years ago
Academic affiliations	Institute of National Importance
Chairman	Rajendra Prasad Singh ^[1]
Director	Shreepad Karmalkar ^[2]
Academic staff	150 ^[3]
Students	1,842 ^[3]
Undergraduates	1,347 ^[3]
Postgraduate students	404 ^[3]
Doctoral students	495 ^[3]
Location	Bhubaneswar, Odisha, India

 20°18'10.9434"N
85°49'26.45"E

Campus Sub-Urban

936 acres (3.79 km²)

Website www.iitbbs.ac.in



Wikimedia | © OpenStreetMap

Indian Institute of Technology Bhubaneswar (IIT Bhubaneswar) is a [public technical university](#) established by the [government of India](#) in 2008, located at [Bhubaneswar, Odisha, India](#).

The institute admits students for bachelor's, master's programs via [JEE Advanced](#) and [Graduate Aptitude Test in Engineering](#) respectively.^[4] The permanent campus at Argul, [Khordha District](#) was inaugurated by the current prime minister of India, [Narendra Modi](#) on 24 December 2018. The area of research are on science, engineering and humanities.

History[\[edit\]](#)

Earlier controversy[\[edit\]](#)

Establishing an [IIT](#) in [Odisha](#) was a long-standing demand for several decades. As the state ranked at the bottom in terms of centrally funded academic and research institutions, there were strong allegations of [Congress](#) led central government neglect.^{[5][6]} There were several incidents of protest, both locally in [Odisha](#),^{[7][8][9][10][11][12]} the National Students Union of India (NSUI),^[13] and eminent nonresident Indian academics. An organization called Agamee Odisha was formed, that spearheaded mass agitation throughout the state.^{[11][12]} There also have been stray incidents of violence related to the issue of Odisha's neglect.^[14] Politicians

including the Chief Minister of Odisha, [Naveen Patnaik](#), cast this festering issue as a sign of severe neglect of the state by the [UPA](#) government in [New Delhi](#).^{[15][16][17][18][19][20]} In May 2007, this became a major issue in the Indian parliament.^{[21][22][23][24]} The opposition [NDA](#) staged a walk-out in the Indian parliament, accusing the ruling [UPA](#) of neglecting the state's economic development.^{[25][26][27]} Sections of the media reported that the Congress party led UPA government had been embarrassed by this issue.^[28] Eventually, the HRD minister Mr. Arjun Singh relented, leading to the inception of IIT Bhubaneswar.^[29]

Establishment

[\[edit\]](#)

The birth of the Indian Institute of Technology Bhubaneswar, came on the 60th anniversary of the country's Independence on 15 August 2007 when [Manmohan Singh](#), Prime Minister of India at that time, made the announcement about the expansion of IIT system in the country.^{[30][31]} Further, the [National Development Council](#) of the Planning Commission, in its 54th meeting held on 19 December 2007, approved the proposal as part of the approval process of the 11th Five Year Plan (2007–12).^{[32][33][34]}

The actual birth of the institute was announced by the Minister of [Human Resource Development](#) Shri. [Arjun Singh](#) in a press conference on 28 March 2008.^[35] The Ministry of [Human Resource Development](#), Department of Higher Education, [Government of India](#), vide its Order dated 9 May 2008 decided that [IIT Kharagpur](#) would mentor the setting up of this new IIT for 2–3 years.^[36] It was further decided that the Director of the mentor IIT i.e. IIT Kharagpur, would be the mentor Director of the new IIT^[37] pending selection of regular Director and the chairman, Board of Governors (BOG) of [IIT Kharagpur](#) would also be the Chairman of the BOG of this new mentored IIT Bhubaneswar.

The [Union Cabinet](#), at its meeting held on 17 July 2008 approved setting up eight new IITs including IIT Bhubaneswar at a cost of ₹760 crore (US\$95 million) per IIT.^[38] The Cabinet also approved creation of the post of Director and Registrar along with 30 Faculty per year for each of the new IITs. It was also decided that pending amendment of the Institute of Technology Act, 1961 for inclusion of IIT Bhubaneswar as an Institute of National Importance,^[39] the Institute would start functioning under aegis of Indian Institute of Technology Bhubaneswar Society to be registered under the Societies' Registration Act, 1860 (Act XXI of 1860).^[40]

Papers were filed on 19 July 2008 with the Registrar of Societies Odisha, [Cuttack](#) for registration of IIT Bhubaneswar Society and the society was registered on 22 July 2018.^[41]

IIT Bhubaneswar became the first amongst the eight new IITs to become operational with a sanctioned intake of 40 students each in the disciplines of Civil, Mechanical and Electrical Engineering. Classes for the first batch of students started from the campus of IIT Kharagpur

at Kharagpur, the mentor Institute for IIT Bhubaneswar on 23 July 2008 with admission of 95 students.^[42] IIT BHUBANESWAR became an Institute of National Importance from 29 June 2012 with notification of Amendment in the Institutes' of Technology Act, 1961 by the Ministry of Human Resource Development, (Department of Higher Education) Government of India published in the Gazette of India dated 2 July 2012.

The process of selection of Faculty and the Registrar were initiated through an issue of advertisement on all India basis. Shri Bata Kishore Ray from [MHRD](#) Govt. of India joined as the first employee and first Registrar of the institute on 31 December 2008.^{[43][44]}

To finalise the site for the permanent campus of IIT Bhubaneswar, the [MHRD](#) had set up a Site Identification Committee under the Chairmanship of Shri Ashok Takhur, Additional Secretary to the [Government of India](#) which visited Odisha during 24–25 December 2008.^[45] After visiting four sites proposed by the [Government of Odisha](#) i.e. Banki, Ramdaspur in [Cuttack](#) district and Gayabandh and Jatni in Khordha district, the Committee recommended the site at Jatni.^[46] The recommendation of the committee was approved by the [Government of India](#) on 13 January 2009. The Government of Odisha agreed to provide 936 acres (3.79 km²)^[47] of land free of cost out of which 518 acres (2.10 km²) had been given physical possession on 10 February 2009.^[48] The State Government also agreed to provide other facilities including a four-lane road from National Highway No.5 (Kolkata-Chennai) to the IIT.^{[49][50][51][52]} Prof M Chakraborty, deputy director, IIT Kharagpur joined as the Director of IIT Bhubaneswar on 19 May 2009. He took over the rein from Prof D. Acharya, the earlier Director of the institute. IIT Bhubaneswar became operational in the city of Bhubaneswar on 22 July 2009 with shifting 2008 batch of students from IIT Kharagpur and admission of 117 new students in 2009. The Institute started functioning at IIT Kharagpur's Extension Centre built in 1998 in Bhubaneswar.^[53]

Campus and location[\[edit\]](#)

Permanent Campus[\[edit\]](#)

The [Government of Odisha](#) has allotted about 936 acres of Government land for permanent campus of the institute. In addition, the State Government is acquiring about 16 acres of private land at its own cost to make the land contiguous. The Foundation Stone of the permanent campus at [Arugul](#), on the outskirts of [Bhubaneswar](#) was laid on 12 February 2009. Construction of 4-lane access road from the National Highway 5 and provision of water and electric supply to the campus by the State Government have made considerable progress. The Government of Odisha has also agreed to provide 75 acres of land along the [Puri-Konark](#) coastline to set up an Innovation Centre for Climate Change.



Administrative Building of IIT Bhubaneswar

[\[54\]](#) The site near Jatni Railway Station on the East Coast Railway is 35 kilometres from Biju Patnaik Airport Bhubaneswar. The land is picturesque with Barunai Hill on one side and a reserve forest nearby. The site is at 20° 10' N and 85° 42' E. A total of 936 acres (3.79 km²) of land has been allocated towards the self-contained campus for nearly 10,000 students and 1,100 faculty. A science park is being set up as a part of this institution to support industry oriented research activities. [\[55\]](#) The institute has started operating in its new campus at Arugul from academic year 2015–16. The campus construction began on 14 August 2011, Chief minister Naveen Patnaik laid the foundation stone of the IIT campus at Aragul village near Jatni. [\[56\]](#) The campus master plan has been prepared by Vastunidhi Architects, Noida. [\[57\]](#)



Main Gate of IIT Bhubaneswar

Marine Campus[\[edit\]](#)

IIT Bhubaneswar is the first IIT to set up a separate marine campus in 2011 for conducting research in rising sea levels, ecology, disaster management, marine ecosystems, fishery development, and other areas. This campus, which will be a part of the School of Earth, Ocean and Environment Sciences, will be set up near [Chilka lake](#). It will have educational facilities for undergraduate and postgraduate students. [\[58\]](#)[\[59\]](#)[\[60\]](#)[\[61\]](#)

Temporary Campuses[\[edit\]](#)

The institute used to operate from a number of locations within the city of [Bhubaneswar](#) which included Extension Centre of IIT Kharagpur, Toshali Bhawan and Workshop cum Laboratory Complex near IIT Kharagpur Extension Centre for laboratory facilities, particularly of 3rd and 4th year students. Besides, the Institute had also received tremendous support from other institutes viz. [Institute of Minerals and Materials Technology](#) and [Central Tool Room & Training Centre](#) for laboratory and workshop facilities, respectively.

Hostel & Housing[edit]

Hostel facilities to students have been provided through a 200 capacity Dr. [A. N. Khosla](#) Hall of Residence of IIT Kharagpur near its Extension Center. In addition, the institute has two hostels (started in July 2015) at its permanent campus, Mahanadi Hall of residence(MHR) of 800 capacity for boys and Subarnarekha Hall of Residence(SHR) for girls of 200 capacity. The institute has also provided housing facility for the Faculty members and the staff members at its campus, Faculty Quarter(FQ) and Staff Quarter(SQ).

Education Hub[edit]

Several other universities and research institutions are either present or being established in the vicinity, including [AIIMS Bhubaneswar](#), [NISER](#), [IIIT](#), [XIMB](#), one of the Indian government's proposed National Universities of international calibre, and the [Institute of Physics](#). [NISER](#)'s campus is 2 km away from the IIT. Other institutions, such as [Sri Sri University](#), premier law school [National Law University Odisha](#), as well as the world's biggest academic institution, [Vedanta University](#), will be in the neighboring places of [Cuttack](#) and [Puri](#) respectively.^{[62][63]} An advantage of this IIT is its location at Bhubaneswar, an emerging education hub, that is being promoted as an Information Technology Investment Region (ITIR) by the government.^[64] A total of 40 km² of land has been allocated for the purpose, out of which about 60% will be devoted to research and development.^[65] An estimated ₹780 crore (US\$98 million) will be invested by the Indian government within the next few years in order to develop the institute.

Connectivity[edit]

The Odisha state government is constructing a four-lane expressway directly from the National Highway No. 5 (a part of the [Golden Quadrilateral](#)) to this new IIT for increased connectivity. Khurda Rd railway station is 4 km away from the campus, and the Biju Patnaik airport is 35 km away. A new international airport is being constructed even closer to the IIT campus at a distance of 12 km.^[66]

Organization and administration

Governance

See also: [Indian Institutes of Technology](#) § [Organisational structure](#)

All IITs follow the same organization structure which has [President of India](#) as visitor at the top of the hierarchy. Directly under the president is the IIT Council. Under the IIT Council is the board of governors of each IIT. Under the board of governors is the director, who is the chief academic and executive officer of the IIT. Under the director, in the organizational structure, comes the deputy director. Under the director and the deputy director, come the [deans](#), heads of departments, registrar.

Schools

The institute has adopted the concept of Schools rather than Departments for promoting inter-disciplinary research. At present the following Schools offer academic programmes:

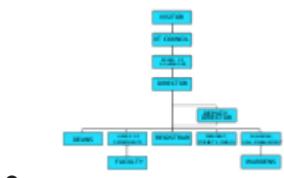
- School of Basic Sciences ([Physics](#), [Chemistry](#), [Bio Science & Mathematics](#))
- School of Humanities, Social Sciences and Management ([Economics](#), [English](#) & [Psychology](#))
- School of Mechanical Sciences ([Mechanical Engineering](#))
- School of Infrastructure ([Civil Engineering](#))
- School of Electrical Sciences ([CSE](#), [ECE](#) & [Electrical Engineering](#))
- School of Mineral, Metallurgical and Materials Engineering ([Metallurgy & Material Engineering](#))
- School of Earth, Ocean and Climate Sciences ([Geology](#), [Atmospheric & Ocean Science](#))

Research Centres

- [Virtual & Augmented Reality](#)^{[69][70]}
- [Design & Innovation](#)^{[71][72]}
- [Probiotics & Human Microbiome](#)^[73]
- [Material Science](#)^[74]
- [AI & Mechatronics](#)^[75]
- [Human-Computer Interface](#)^[76]
- [Quantum Chemistry](#)^[77]

- Protein Biophysics^[78]
- Synthetic Organic Chemistry^[79]
- Coastal Observatory^[80]
- Chips 2 Startup^[81]
- Cyber Security^[82]
- AI & High Performance Computing^[83]

Structure[edit]



Structure of IITs

Academics[edit]

The academic programmes of Institute include BTech (Hons.) in Computer Science, Civil, Electrical, ECE and Mechanical Engineering with an intake capacity of 50 each at the undergraduate level. BTech (Hons.) in Metallurgical and Materials Engineering is with intake capacity of 20. The institute also started Dual degree courses in Mechanical and Civil with intake of 10 from academic year 2016–17, which has been increased to 15 for Mechanical and 13 for Civil as of 2020–21. The Institute started the Doctoral programme from the academic session 2009–2010 and will offer admission to the joint MTech-PhD Programme from July 2012. The institute has broadly adopted the course curricula, syllabi and other academic regulations of IIT Kharagpur, the mentor institute.

Academic year[edit]

The academic year is divided into two semesters, a spring semester and an autumn semester. Between these two regular semesters, the academic year also includes a shorter summer quarter, during which some courses are offered. The institution follows the credit-based system of performance evaluation. The credits allocated to each course depends on the total number of contact hours, including lectures, tutorials and laboratory sessions. Each course is usually worth three credits. The typical course load per semester is 21–24 credits for undergraduate students.

Undergraduate programs[edit]

IIT Bhubaneswar offers undergraduate degrees in six technical disciplines and integrated five-year programs for undergraduate students leading to MTech degrees.

The BTech degree is based on a four-year program comprising eight semesters. The first year of the BTech curriculum has common courses from various departments. At the end of the first year, an option to change departments is given to meritorious students on the basis of their performance in the first two semesters. From the second year onwards, the students take courses offered exclusively by their departments that are known as "electives". In addition to these, the students takes inter-disciplinary courses known as "Lateral courses" and *breadth courses* for courses in humanities and social sciences, and management and information technology. During the 7th & 8th semester, undergraduate students undergo co-curricular practical training in Indian industry and undertake a Research project.

Admission[edit]

See also: [Indian Institute of Technology Joint Entrance Examination](#)

Admission to these programs is through the Joint Entrance Examination ([JEE](#)), taken by students seeking admission into the IITs after completing 12 years of schooling. As of 2016, the total undergraduate student intake every year is 260, with 40 students in each of the above-mentioned disciplines and 20 in Metallurgical and Materials Engineering. Each Dual degree courses has an intake of 10 students. The plan is to have 2,500 students within 3–4 years, which will expand to 10,000 students within 15 years.^[84]

Postgraduate programs[edit]

The MTech degree is based on a two-year program comprising four semesters. Research is included as a component in the MTech level.

Institute offers Joint MTech — PhD programs in all its schools except for the Schools of Basic Sciences and Humanities, Social Sciences & Management.

Doctorate programs[edit]

Institute has been admitting students into PhD programs since 2009.

Rankings[edit]

University rankings

General – international

[QS \(World\) \(2022\)](#)^[85] 701–750

[Times \(World\) \(2023\)](#)^[86] 1001–120
0

[Times \(Asia\) \(2022\)](#)^[87] 301-350

[Times \(Emerging\) \(2022\)](#)^[88] 351-400

General – India

[NIRF \(Overall\) \(2022\)](#)^[89] 65

Engineering – India

[NIRF \(2022\)](#)^[90] 36

[India Today \(2022\)](#)^[91] 11

IIT Bhubaneswar was ranked at 701–750 in the world by the [QS World University Rankings](#) 2022 list.^[85]

Among engineering colleges, IIT Bhubaneswar ranked 11 by [India Today](#) in 2022.^[91] It ranked 36 among engineering colleges by the [National Institutional Ranking Framework \(NIRF\)](#) in 2022.^[90]

It was ranked 1001–1200 in the world by the [Times Higher Education World University Rankings](#) of 2023,^[86] 301–350 in Asia^[87] and 351–400 among Emerging Economies in 2022.^[88]

Library^[edit]

The central library, which started functioning in January 2010, is a 300 square feet (28 m^2) room with a collection of 23000, text books. In addition, the mentor institute, IIT Kharagpur, provides IIT Bhubaneswar with access to its online resources such as e-databases, e-journals and abstract indexing services.^[92]

Collaborations^[edit]

Foreign^[edit]

Sources:^{[93][94][95][96]}

- University of Quebec, Canada
- University of Waterloo, Canada
- York University, Canada
- Texas A&M University, US
- Warwick Manufacturing Group, UK
- University at Buffalo, US
- McGill University, Canada
- Shanghai Jiao Tong University, China
- University of Edinburg, UK
- University of Western Ontario, Canada
- University of North Texas, US
- University of Warwick, UK
- University of Massachusetts Dartmouth, US
- Washington University in St. Louis, US
- University of Southampton, UK
- National Oceanography Centre, UK
- University of Concepción, Chile
- Woods Hole Oceanographic Institution, US

- University of Surrey, UK
- University of Manchester, UK
- University of British Columbia, Canada
- Association for Overseas Technical Co-operation and Sustainable Partnership, Japan^[97]
- Plovdiv University "Paisii Hilendarski"
- Jahangirnagar University
- Bangladesh University of Engineering and Technology

National[edit]

- DRDO^[98]
- OPTCL^[99]
- AIIMS BBSR^[100]
- BHEL^[101]
- NALCO^[102]
- NMDC^[103]
- WHEEBOX^[104]
- NHAI^[105]
- MOES^[106]
- AICTE^[107]
- ISRO^[108]
- SDI BBSR^[109]
- Oil India Ltd^[110]
- Alma Fiesta: Alma Fiesta is the annual socio-cultural festival of Indian Institute of Technology, Bhubaneswar. It is a three-day festival. Usually launched during the mid weeks of January, Alma Fiesta offers a number of events that range from cultural performances like Odissi, Gotipua to clay modeling workshops, Euphony (War of rock bands), Spotlight (Stage play competition). The events organized also include modern dance forms like hip-hop, vocals, duets, karaoke, single minute extempore, spelling bee, pencil sketching as well as a youth marathon. Alma Fiesta also maintain a social drive named Prayatna.^[citation needed]
- Wissenaire: Wissenaire is the annual techno-management festival of Indian Institute of Technology, Bhubaneswar which is held in its permanent campus located in Argul, Odisha.^[111] It is a three-day- long event usually held in the month of January every year. Wissenaire encompasses various sectors of technology, science and management. These include quizzing, coding, designing, robotics, planning and testing the creativity and innovative spirit of the young, intelligent minds.^[citation needed]

- Entrepreneurship Summit: E-Summit, organized by the E-Cell hosts a number of panel discussions, workshops, competitions, and start-ups with the presence of personalities from industries, academia, and government. [112]

Societies[edit]

The student societies are:

- Robotics and Intelligent Systems Club (R.I.S.C)
- FEBS - The Society of Finance, Economics and Business of IIT Bhubaneswar. The society deals with domain like Finance, Economics, Business, Product management, Consulting, Data Science and Machine Learning.
- Web Design Society. (WebnD)
- Astronomy Society.(Nakshatra)
- Programming Society. (Neuromancers)
- Dance Society.(D-Gang)
- Dramatics Society. (The Fourth Wall)
- Entrepreneurship Cell.(E-Cell)
- Film Making Society. (Cinewave)
- Fine Arts Society. (Kalakriti)
- Literary Societies. (Panacea, Abhivyakti)
- Music Society.(Aaroh)
- Photography Society. (Clix)
- Social Welfare Society. (Souls for Solace)
- Quizzing Society. (Quiz Society)

Startup Incubation[edit]

The Department of Science & Technology and the Ministry of Human Resource Development, Government of India sanctioned Rs.1.50 Crore for establishing a Startup Centre at IIT Bhubaneswar. The then Director of IIT Bhubaneswar inaugurated the center on 20 June 2016. [113][114] The Startup Centre is envisioned to have enrollment minimum of 10 startups in the 1st year of its commencement. This facility is going to be made available to all budding entrepreneurs of the region. Additionally, the Institute established an in-house technology incubator, as a part of well-thought-of incubation-cum-entrepreneurial eco-system with the objective of encouraging students to take up entrepreneurship. This facility would be made available to the outgoing students and to the faculty of the institute. In 2017, the institute received license and incorporation certificate from Registrar of companies to run IIT Bhubaneswar Research and Entrepreneurship Park, a not for profit company which will act as a nodal center for promoting entrepreneurship, research, and startup activities. [115]

Dance as a B tech Subject

[edit]

In 2015, IIT Bhubaneswar introduced [Odissi dance](#) as a BTech subject becoming the first IIT in the country to introduce any dance form in its curriculum. Noted Odissi exponents Kum Kum Mohanty, [Iliana Citaristi](#) along with other experts in the field have been roped in to design the curriculum and the exam pattern for the course. Any student who continues it until the final year will get a diploma in dance as well.[\[116\]](#)

Indian Institute of Technology (BHU) Varanasi

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	Uttar Pradesh 221005
Contact Person For Admission:	Prof. S.B. Dwivedi
Designation:	Dean (Academic Affairs)
Email:	doaa@iitbhu.ac.in
Alternate Email:	academics@iitbhu.ac.in
Phone Nos:	91-5422367042
Fax No:	91-542-2368428
Mobile No.:	

About the Institute

Indian Institute of Technology (Banaras Hindu University) is situated in the magnificent campus of Banaras Hindu University spread over nearly 1300 acres at the southern end of the ancient city of Varanasi in Uttar Pradesh. IIT(BHU), formerly known as the Institute of Technology, was a part of the Banaras Hindu University has been an internationally acknowledged seat of learning has been established in 1919 by the great visionary and patriot, Mahamana Pandit Madan Mohan Malaviya Ji. Engineering Education in Banaras Hindu University commenced as early as in 1919 with the establishment of Banaras Engineering College (BENCO). The University has also pioneered engineering education by being the first in the country to start degree courses in Mining, Metallurgy, Ceramic Engineering and Pharmaceutics with the establishment of the College of Mining and Metallurgy and the College of Technology in the years 1923 and 1932 respectively, in order to meet the then requirements of the going to be Independent India. In 1969 these three colleges were amalgamated to form the Institute of Technology. The Institute of Technology, Banaras Hindu University (IT-BHU), was converted into Indian Institute of Technology (Banaras Hindu University), Varanasi by the Government of India, New Delhi on 29th June 2012.

The institute completed its 100 years in 2019, and we wish to take forward the legacy with rejuvenated vigor and sheer dedication with a commitment to nation-building. As a mark of recognition of Centenary Celebrations of the institute, Hon'ble Prime Minister Shri Narendra Modi inaugurated PARAM SHIVAY at IIT (BHU) Varanasi, the Super Computer of 833 teraflop capacity under the National Supercomputing Mission. He also released a postage stamp and postal album, which bore a picture of the main building of IIT(BHU). Notable among eminent guests from

the Government were Hon'ble Chief Minister of Uttar Pradesh Shri Yogi Adityanath as the chief guest, Hon'ble Minister Shri Manoj Sinha.

During these events the institute apprised various stakeholders about the centenary projects like Centenary Innovation and Research Park (CIRP), Centenary Defence and Precision Engineering Hub (CDPEH), Global Outreach and Engagement Centre (GOEC), Malviya Student Activity and Computing Centre (MSACC), and construction of new hostels. Five Centenary Chairs were also instituted to create a state-of-the-art teaching and research environment in the institute. Besides, the establishment of seven centers on emerging thrust areas of research and education is another centenary initiative taken up by the institute.

Fee Structure

Fee Structure for 4-Year B.Tech., 5-Year Integrated (B.Tech.-M.Tech.) Dual Degree and 5-Year B.Arch. Programme

* For those students, whose family income is \leq 5.00 and >1.00 lakh –1/3 of the tuition fee (2/3 exempted).

**** For those students, whose family income is \leq Rs. 1.00 lakhs – exempted from tuition fee.**

NOTE: In addition to the above, every student has to pay per Semester Mess advance of Rs. 12000.00 (every semester).

Academic Structure

The Indian Institute of Technology (BHU) offers 4-Years B.Tech. degree programmes (UGD), 2-Years M.Tech./M.Pharm./M.Sc. degree programmes (PGD), 5-Years Integrated (B.Tech.-M.Tech.) Dual Degree programmes (IDD), 5-Years B.Arch. degree programme and Ph.D. programmes. The Indian Institute of Technology (BHU) consists of Ten Engineering Departments (Ceramic Engineering, Chemical Engineering and Technology, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Electronics Engineering, Mechanical Engineering, Metallurgical Engineering, Mining Engineering and Pharmaceutical Engineering & Technology), three Science Departments (Chemistry, Mathematical Sciences and Physics) and three Interdisciplinary Schools (Biochemical Engineering, Biomedical Engineering and Materials Science and Technology). Besides these, a Department of Humanistic Studies was also established in the year 2015. The Department of Architecture, Planning and Design has been started its academic activities from the session 2019-20.

Research and Innovation is an integral part of academic activities of the Institute. The academic curriculum encourages undergraduate students to take up projects at the earliest possibility. The research and development activities are supported by different National Agencies, viz. Ministry of Human Resource and Development (MHRD), Department of Science and Technology (DST), Department of Bio-Technology (DBT), All India Council for Technical Education (AICTE), Council of Scientific and Industrial Research (CSIR) and Defense Research and Development Organization (DRDO) through various programmes.

Credit System

IIT(BHU) follows the semester system. An academic year (July-May) consists of two semesters each of approximately 18 weeks duration. The odd semester begins in the 4th week of July and ends in the 1st week of December. The even semester begins in the 1st week of January and ends in the 2nd week of May. Besides these, a Summer Term is also included in an academic session. Each theory and laboratory course have a certain number of credits assigned to it depending on its lecture and laboratory contact hours in a week. Each course is coordinated by a Coordination Committee, which has full responsibility for coordinating the course, holding the periodical and end semester examinations and awarding of letter grades on a 10-point scale on relative grading basis. A student's performance is measured by the number of credits that he/she has earned and also by the Semester Performance Index (SPI)/Cumulative Performance Index(CPI) earned by him/her for a semester/course.

Rules For Change Branch

A. Guidelines for Change of Discipline

Student will be allowed change of programme on the basis of his/her academic performance subject to strength constraints of the of different UGD/IDD programmes of different Departments/Schools, using the guidelines given below. Change of programme is a privilege and not a right. Change of programme shall be permitted in the beginning of the 2nd semester as well as the 3rd semester.

The student (a) will not be allowed change of options after the last date of the application; (b) can withdraw his/her application within the specified period announced from the office of the Dean (Academic Affairs); and (c) must join the new allotted discipline and is not eligible for withdrawal.

Foreign Nationals who have been sponsored by their respective Governments and/or Government of India for specific courses are not eligible for change of programme.

B. At the beginning of the 2nd Semester:

1. Eligibility criteria

- a) The student should have passed all 1st Semester courses and her/his SPI at the end of the 1st Semester should be ≥ 8.0 . Students admitted through Preparatory course shall not be permitted a change of discipline.
- b) The merit of the students will be determined on the basis of Performance Index (PI) calculated on the basis of grades of Institute Science and Institute Engineering courses (being IS or IE codes only).

2. Procedure

Students, who are expecting to fulfil the above eligibility criteria, will apply for a change of discipline towards the end of the first semester to the office of the Dean (Academic Affairs) on the notification.

Change of discipline shall be notified by the Office of the Dean (Academic Affairs) after the declaration of the 1st-semester results and before the beginning of the 2nd Semester.

As many programme changes as possible will be granted in decreasing order of Performance Index (PI) to applicants, subject to eligibility and strength constraints of the programmes.

In case of a tie, the SPI of the 1st Semester shall be considered. If SPI's are also equal, the decision shall be made on the basis of All India Rank (AIR) of JEE(Advanced).

C. At the beginning of the 3rd of the Semester:

A student may be permitted a change of discipline after the 2nd semester provided vacancy exists at the end of the 2nd semester in a programme and the student had no change of discipline at the beginning of the 2nd semester.

1. Eligibility criteria

- a) The student should have passed all courses upto the 2nd semester and her/his CPI at the end of the 2nd Semester should be ≥ 8.0 .
- b) The merit of the students will be determined on the basis of Performance Index (PI) calculated on the basis of grades of the Institute Science and the Institute Engineering courses (being IS or IE codes only) of the 1st and the 2nd semesters together.

2. Procedure

Students, who are expecting to fulfil the above eligibility criteria, will apply for a change of discipline towards the end of the 2nd semester to the office of the Dean (Academic Affairs) on the notification.

Change of discipline shall be notified by the Office of the Dean (Academic Affairs) after the declaration of the 2nd-semester results and before the beginning of the 3rd Semester.

As many programme changes as possible will be granted in decreasing order of Performance Index (PI) to applicants, subject to eligibility and strength constraints of the programmes.

In case of a tie, the CPI of the 2nd Semester shall be considered. If CPI's are also equal, the decision shall be made on the basis of SPI of the 2nd semester.

D. Strength and other constraints

While making the change of discipline of a student, the number of students in a programme would not fall below 50% of the sanctioned strength in that programme. Further, the number would not exceed the sanctioned number of students by more than 10%.

The change of discipline/branch will be there from one discipline to another within their respective programmes only i.e. the students of 4-year programmes may change disciplines within 4-year programmes and the students of 5-year programmes may change disciplines within 5-year programmes only.

If a student was offered change of discipline at the beginning of the 2nd Semester, he/she shall not be entitled to change of discipline at the beginning of the 3rd Semester.

E. The requirement for Branch Changed students

There may be a difference between Institute Science and Institute Engineering courses from his/her old programme with his/her new programme. In such cases, the DUGCs may direct the students to study the courses of respective programmes or considering that the other courses studied by the students also serve the breadth requirement for their programme may allow waiver on case to case basis.

In addition, if a change of discipline has been permitted in the 3rd semester, the student will also have to study all departmental courses of the new programme offered in the 2nd semester.

Faculty

The faculty details are available on the Institute website.

Facilities

Institute has well-equipped laboratories and workshops, excellent computer facilities in all Departments/Schools in addition to a Central Computer Facility. The other facilities are:

Supercomputing Centre

A Supercomputing Center has been set up in the Institute under the National Supercomputing Mission. The supercomputer PARAM Shivay has a peak processing speed of 833 Tera FLOPS. Sixty percent of the processing power is for local use by the IIT(BHU) and BHU research community, and the rest for other CFTIs and research labs across the nation. The system has been commissioned under the Make in India program, and the hardware has been manufactured at a plant in Chennai by the French company Atos. The system is a sophisticated mix of CPUs and GPUs with relevant systems and application software based on open source. Inaugurating the IIT (BHU) Supercomputing Center on 19th February 2019, the Honorable Prime Minister Shri Narendra Modi said "*...the land of Lord Vishwanath will now contribute in accelerating research in key areas across the Nation by providing fast computation facility through the PARAM Shivay system...*". The Institute has organized a series of hands-on workshops to impart expertise to the user community for the utilization of the facility.

Library Facilities

The IIT(BHU), Varanasi library system consists of the Main Library and five departmental libraries, which collectively support teaching, research, and extension programs of the institute. The library system, besides having an excellent print collection of over 1,40,000 volumes of books, journals, theses, reports, pamphlets, it also provides access to over 8,000 electronic journals and more than 20,000 electronic books, e-standards, and databases in science, engineering, and technology. Library provides reading room facilities, access to Digital Library, web OPAC, remote access of e-resources, discussion room facility, and reference services related to research and teaching. The library has also created the Indian research Information Network System (IRINS) database of Institute researcher's profile, Institutional Repository.

Library also supports research activities by providing the Research Support Tools (Anti-Plagiarism software, Grammarly, InSite, JCR, reference management tools, etc.). Recently the library organized author workshop by Wiley, Taylor & Francis, and Workshop cum User Awareness Program on InSite and Turnitin.

Hostel Facilities

The Institute has fifteen hostels for boys and three for girls. All the hostels are equipped with modern amenities. The messes are managed very well by the students and wardens. There is an Institute Cafeteria, which runs during Institute working hours.

Medical Facilities

The health problems of the students are looked after by the Students Health Care Complex of the University. For specialized treatments, the consultation of senior specialists is available from the renowned Sir Sunder Lal Hospital attached to the Institute of Medical Sciences of the Banaras Hindu University.

The Institute started a Medical Insurance of each student from the session 2019-20 onwards and Rs. 365/- be charged every Odd Semester to all registered students. This facility is created to provide the best medical facilities to the students, which covers the expenses of the student's health problems.

Student Life at Institute

The University campus as a whole is designed as a Semi-Circle with different wings located in different sectors. Thus, the IIT(BHU) campus is having all the Hostels located in the outer sector and academic wings are located in the inner sector with playgrounds in between. There are many recreational facilities for all-round personality development of the students. Besides these, the students can also make the best use of the facilities such as certificate courses in foreign languages, music, fine arts etc. of the Banaras Hindu University, some of which are now included in the new curriculum.

Financial Assistance

A large number of scholarships is available to undergraduate students. There is a good number of Endowment Scholarships also available in general as well as for students in specified disciplines. Some of these scholarships are on a loan basis. The Indian Institute of Technology (BHU) is also one of the recognized institutions for the award of scholarship to SC/ST students under Central Section Scholarship Scheme of top class education scheme of Ministry of Social Justice and Empowerment and Ministry of Tribal Welfare Offices. IDD students are provided Institute Fellowship at Part-V level on fulfilling certain basic criteria. All types of Scholarships/Fellowships are announced on the Institute website.

Training & Placement

Training and Placement Cell of the Institute is actively involved in arranging the in-campus placement of students in various industries and organizations and also arranges summer practical training which is an essential component of academic curricula. This cell also organizes soft skill development programmes and gives pre-placement training in various aspects. The placement record of the Institute has been excellent and the job offers are more than 100%. These job offers mostly come from organizations like Microsoft, Hindustan Unilever, De Shaw, NTPC, Deloitte, Morgan Stanley, BHEL, GAIL, Goldman Sachs, Indian Oil, Bharat Petroleum, DRDO, Tata Motors, etc.

Large numbers of students are also opting for higher studies in reputed universities all over the world. The students who have an aptitude for management are qualifying for management programmes in IIMs. The industry-oriented summer internship programme is aimed at inculcating professional culture amongst the students and familiarizing them with the work environment in

the industry. The students are also encouraged to opt for a summer internship in industrial/R&D/reputed educational institutions in foreign countries.

Industry And Alumni Relations

The alumni of the Institute are in the apex seat of esteemed organizations/institutions in India and abroad. They are the motivating force behind the overall development of the Institute.

Recreational/Extra Curricular activities

The analytical, creative and managerial skills of the students get a chance to be honed through activities of the vibrant Institute Gymkhana, which has cultural, sports & games and co-curricular wings.

The Institute has full-fledged cricket and football grounds, and also volleyball, basketball and hard-court, tennis courts. All the hostels have facilities for indoor games and entertainment. Apart from these, all students of the Institute enjoy the privilege of a swimming pool, a gymnasium with lateral facilities and indoor stadiums. Gymkhana activities are mainly managed by the students to promote artistic and creative talents in dramatics, elocution, music and visual arts. Gymkhana has various active clubs, viz. HAM, Audio, Photography, Automobile and Aeromodelling, Cine, Computer, Astronomy, etc. Students actively take part in managing three national level events every year, viz. all India Cultural Festival "KASHI-YATRA", all India Sports Competition "SPARDHA", and all India Exhibition of Engineering and Technology Models "TECHNEX".

Design and Innovation Centre (DIC)

IIT-BHU and DIC, BHU has been established to work on the possibilities of innovation in Technology and Humanities, Liberal Arts, Social Science, Art, Culture, Music, languages and other relevant areas. DIC, IIT (BHU) and DIC, BHU works as HUB, and the center has three spokes; (i) Indian Institute of Information Technology, Allahabad, (ii) Motilal Nehru National Institute of Technology, Allahabad, (iii) University of Allahabad.

Center has also established three labs namely; Graphic and Digital Media Lab, Digital Innovation Gallery &Design Cafe (Prototype lab and Workshop Place). Graphic and Digital Media Lab provides the facility of graphic design, web design, mobile app design, imaging, animation, documentaries, design counseling, etc. The Digital Innovation Gallery works as exhibition platform for IIT-BHU, BHU and other spokes of DIC-BHU. A modern prototype lab has also been established for students.

Malaviya Centre for Innovation, Incubation & Entrepreneurship (MCIIE)

The Malaviya Centre for Innovation and Incubation (MCIIE) at IIT (BHU) Varanasi is functional since 2011. The MCIIE (along with partners: NSTEDB, Department of Science & Technology, Govt. of India, New Delhi, DSIR, Govt. of India, New Delhi, TIFAC, New Delhi, Ministry of MSME, Govt. of India, EDII, Ahmadabad) aims to promote Techno-Entrepreneurship and enterprise creation. One of its critical interventions is to provide Business Incubation to technology start-ups. Recently MCIIE and CISCO, in collaboration with NASSCOM Foundation signed an MoU to set up a Cisco thing Qbator maker space at MCIIE to drive innovation in the areas of Internet of Things (IoT) and other emerging digital technologies.

Location and Accessibility

The IIT(BHU) and its Hostels are located on the BHU Campus approx. 3 km. From the Main Gate of the Banaras Hindu University, which is about 10 km. from Varanasi Cantt. Railway Station and Lal Bahadur Shastri Airport, Varanasi is approx. 30 km away. More details can be found at https://www.iitbhu.ac.in/reach_us

For more information please visit <http://www.iitbhu.ac.in>.

Indian Institute of Technology (Banaras Hindu University) Varanasi^[4] (IIT-BHU) is a [public technical university](#) located in [Varanasi, Uttar Pradesh](#), India. Founded in 1919 as the Banaras Engineering College, it became the Institute of Technology, [Banaras Hindu University](#) in 1968. It was later designated an [Indian Institute of Technology](#) in 2012.^{[5][6]} IIT (BHU) Varanasi has 16 departments, 3 inter-disciplinary schools and 1 [Humanities & Social Sciences](#) Section. It is located inside the [Banaras Hindu University](#) Campus.

History[edit]

IIT (BHU) Varanasi has formerly been known as the Banaras Engineering College (BENCO), the College of Mining and Metallurgy (MINMET), the College of Technology (TECHNO) and the Institute of Technology, Banaras Hindu University (IT-BHU). Its establishment is intimately linked with that of the [Banaras Hindu University](#) (BHU). The first convocation ceremony at BHU was held on 2 December 1920.^[7] BHU has the credit of first starting degree classes in [Mechanical Engineering](#), [Electrical Engineering](#), [Metallurgy](#) and [Pharmaceutics](#), thanks to the foresight of its founder, Pt. Madan Mohan Malaviya.



Department of Electrical Engineering IIT(BHU), Varanasi

The Department of Geology was started under BENCO in 1920. The Geology Department introduced courses in [Mining](#) and [Metallurgy](#). The Department of Industrial Chemistry was started in July 1921. In 1923, Mining and Metallurgy were established as separate departments and in 1944, they were raised to the status of a college forming the College of Mining and Metallurgy (MINMET).^[7]



IIT (BHU) commemorated on a 2019 stamp of India.

In 1968, BENCO, TECHNO and MINMET were merged and the Institute of Technology (IT-BHU) was established integrating the departments of Mechanical Engineering, Electrical Engineering, Civil and Municipal Engineering, Mining Engineering, Metallurgical Engineering, Chemical Engineering and Technology, Silicate Technology and Pharmaceutics. The Department of Silicate Technology subsequently became the Department of Ceramic Engineering. A Department of Electronics Engineering was also established.^[7] The departments of Applied Physics, Applied Mathematics and Applied Chemistry were established in 1985.

The earlier system of regional admission based on merit lists was replaced in 1972 by admission through [Indian Institute of Technology Joint Entrance Examination](#) (IIT-JEE) for undergraduate courses and [Graduate Aptitude Test in Engineering](#) (GATE) for postgraduate courses. In the tenth meeting of the [IIT Council](#) in 1972, it was also proposed to convert the then IT-BHU into an IIT and a committee was appointed by the IIT Council for the purpose but because of political reasons, the desired conversion could not be achieved then.^[8]

In 2003, Committees constituted by MHRD (Professors Joshi and Anand Krishnan Committees)^[9] had recommended for the conversion of the Institute into an [Indian Institute of Technology](#) (IIT).^[10] On 17 July 2008, the government of India issued a press release granting "In principle approval for taking over the Institute of Technology, Banaras Hindu University – a constituent unit of the Banaras Hindu University, a Central University, its conversion into an Indian Institute of Technology and integrating it with the IIT system in the country."^[11] The BHU Executive Council approved the proposal of the HRD ministry to convert IT-BHU to IIT (BHU) Varanasi, retaining academic and administrative ties to BHU.

On 4 August 2010 a bill seeking to amend the Institutes of Technology Act 1961 to declare IT-BHU an IIT was introduced in the Lok Sabha by Minister of State for HRD, D. Purandeswari.^{[12][13][14]} The Lok Sabha passed [The Institutes of Technology \(Amendment\) Act, 2011](#) on 24 March 2011^[15] and the [Rajya Sabha](#) on 30 April 2012, thereby formalizing the IIT status of the Institute.^[16] The Bill was signed by the President of India on 20 June 2012 and notified in the gazette on 21 June.^[17] The Department of Architecture, Planning and Design was set up in the Institute in collaboration with [IIT Roorkee](#), beginning its academic activities in the session 2019-2020. The first cohort of students consisted of 20 students admitted into the five-year programme through the JEE Advanced exam.^[18]

The institute celebrated its centenary year in 2019-2020. It organized a global alumni meet and other cultural events during the celebration. The 80-year-old BENCO chimney was also re-erected to commemorate the institute's completion of a century.^[19]

Organisation and administration^[edit]

Governance^[edit]

See also: [Indian Institutes of Technology § Organisational structure](#)

All IITs follow the same organisational structure which has the [President of India](#) as the visitor at the top of the hierarchy. Directly under the president is the [IIT Council](#). Under the IIT Council is

the board of governors of each IIT. Under the Board of Governors is the Director, who is the chief academic and executive officer of the IIT. Under the director, in the organizational structure, comes the Deputy Director. Under the Director and the Deputy Director, come the [Deans](#), the heads of various departments, and the Registrar.

However, IIT-BHU has special provisions under [The Institutes of Technology Act, 1961](#), where the executive council of [Banaras Hindu University](#) can nominate the Vice Chairman, as well as two members of the board. According to [Kapil Sibal](#), the then [HRD Minister](#), the purpose of such a system was to maintain the integrity of the Banaras Hindu University, and to maintain the linkage between the two (the university and IIT), and ensuring the cross-disciplinary research.^[20]

Departments

[\[edit\]](#)

Indian Institute of Technology (BHU) has 11 engineering departments, 3 science departments, 3 schools, and a humanities department:^[21]

Engineering Departments	Schools	Science Departments	Humanities Department
<ul style="list-style-type: none"> ● Architecture, Planning and Design ● Ceramic Engineering ● Chemical Engineering ● Civil Engineering ● Computer Engineering ● Electrical Engineering ● Electronics Engineering ● Mechanical Engineering ● Metallurgical Engineering 	<ul style="list-style-type: none"> ● Biochemical Engineering ● Biomedical Engineering ● Materials Science and Technology ● Naresh C Jain School of Decision Sciences and Engineering (upcoming)^[22] 	<ul style="list-style-type: none"> ● Chemistry ● Physics ● Mathematics ● Sciences 	<ul style="list-style-type: none"> ● Department of Humanistic Studies. <p>Courses are offered in:</p> <ol style="list-style-type: none"> 1. English 2. History 3. Philosophy 4. Linguistics 5. Sociology

- | | | | |
|---|--|--|--|
| <ul style="list-style-type: none"> • Mining Engineering • Pharmaceutical Engineering & Technology | | | |
|---|--|--|--|

Academics[edit]

Undergraduate programme[edit]

IIT (BHU) Varanasi offers four-year instructional programs for the degree of Bachelor of Technology (BTech) and five-year programs for Integrated Dual Degree (IDD). The IDD program offers both BTech and MTech degrees. Admission to all programs is expressly through the [Joint Entrance Examination – Advanced](#) conducted by the [Indian Institutes of Technology](#).^[23] Earlier half of the intake for Pharmaceutical sciences was through JEE and the other half through BHU-PMT. But after the college was converted into an IIT, intake for BTech and the IDD in Pharmaceutical sciences (now Pharmaceutical Engineering and Technology) is exclusively through [Joint Entrance Exam](#).

Postgraduate programme[edit]

Postgraduate courses offer Master of Technology (MTech) and PhD degrees. Admissions to the MTech program are made through the [Graduate Aptitude Test in Engineering](#) (GATE) conducted jointly by [Indian Institute of Science](#) and [Indian Institutes of Technology](#).^[24] For admission into the various PhD courses, one can apply through the official institute website. The application brochure is released on the same.

Admission[edit]

The admission of students to the institute is through [JEE Advanced](#) for undergraduate courses and [Graduate Aptitude Test in Engineering](#) (GATE) or [Graduate Pharmacy Aptitude Test](#) (GPAT) for postgraduate courses. From 2013, admission to undergraduate programs is based on a two-tier test called (1) Mains and (2) Advanced.^[25] In addition, the students qualifying through JEE (Advanced) need to be in the top 20 percentile of the respective categories and/or have secured 75% or above in the qualifying exam conducted by the boards of their respective state/UT.

Rankings[edit]

University rankings

General – India

NIRF (Overall) (2022) ^[26]	2
	9

Engineering – India

NIRF (2022) ^[27]	1
	3

Among engineering colleges, IIT (BHU) Varanasi was ranked 15 by the [National Institutional Ranking Framework \(NIRF\)](#) in 2023^[28] and 31 overall.^[29]

Library facilities^[edit]

IIT (BHU) Varanasi has a Main Library and five independent departmental libraries. The main library has a collection of books across streams in engineering, science, and technology, along with a host of books in humanities, social sciences, and literary fiction.

The library has about 1,38,000 volumes of books,^[citation needed] journals, theses, reports, and pamphlets. Basic facilities like circulation, scanning, printing, and photocopying amenities are also available in this Wi-Fi-enabled library. The library has a sitting capacity of more than 600 students. The faculty and students can have access to these facilities by registering themselves.



Reading Hall-I, Main Library, IIT (BHU)

The library permits access to nearly 8000 e-journals, 25,000 standards and more than 30,000 electronic books and databases. It has an excellent collection of bound volumes of old (Since 1918) and new periodicals, codes standards, etc. The library also maintains an online repository containing student thesis and publications, transcripts and event videos, available on the Institute intranet.^[30] Apart from this, students also enjoy access to the central and cyber library of Banaras Hindu University.

Student life^[edit]

Gymkhana[edit]

The IIT (BHU) Gymkhana, housed in Kings' Pavilion, is the primary hub of all extracurricular activities in the Institute.

The Gymkhana functions through its five councils:

1. Games and Sports Council
2. Cultural Council
3. Science and Technology Council
4. Film and Media Council
5. Social Service Council

These councils are headed by their respective Counsellors who work in close coordination with the Dean (Student Affairs). On the student side, each council has a General Secretary and two Joint General Secretaries, with each club being headed by a Secretary and two Joint Secretaries. The councils also organize different festivals in the college annually.

Festivals[edit]

IIT BHU has four main student-organised festivals:

- Technex is the annual techno-management festival of IIT BHU and Asia's oldest techno-management fest.
- [Kashiyatra](#) is the annual socio-cultural festival
- Spardha is the annual sports festival
- FMC Weekend is the annual film and media festival

Apart from these, there are several departmental festivals. IIT BHU also participates in Banaras Hindu University's Inter-college festival Spandan^{[31][32]} which is held annually in February.

Institute Magazine[edit]

The institute newsletter, IIT BHU Connect is a bi-yearly magazine that features in-depth cover stories, recently organized events, adopted proposals, and technical advances and helps promote the Institute beyond the boundaries of the university. Having been initiated in 2016, six editions have been published so far which received mostly positive reviews.^[citation needed] It is run by a student team of around twenty students with one Student Editor.

MCIIE[edit]

Malaviya Centre for Innovation, Incubation and Entrepreneurship (MCIIE) was established in 2008. The objective of MCIIE is to produce successful firms that will leave the program financially viable. Incubator tenants benefit from business and technical assistance and official affiliation with the incubator, a supportive community with an entrepreneurial environment, a direct link to entrepreneurs, and immediate networking and commercial opportunities with other tenant firms.^[33] The various programmes under MCIIE include:

- Open Learning Programme in Entrepreneurship (OLPE)
- Entrepreneurship Development and Awareness Programs

- Technology Business Incubator (TBI) sponsored by National Science and Technology Entrepreneurship Development Board, DST, New Delhi.

Alumni^[edit]

Main article: [List of IIT \(BHU\) Varanasi people](#)

IIT (BHU) Varanasi has produced alumni who made a mark for themselves in the fields of technology, business, politics, and arts, among other fields. Alumni interactions are maintained by the Student Alumni Interaction Cell (SAIC) under the aegis of the Dean of Resources and Alumni. IIT BHU has multiple alumni organisations including IIT BHU Global Alumni Association (IBGAA) and the Association of IITBHU Alumni (AIBA).

Some notable alumni include:

- Deepak Ahuja, Former CFO at [Tesla, Inc.](#)^[34]
- Krishan Kant, former [Vice-President of India](#).^[35]
- Manoj Sinha, [2nd Lieutenant Governor of Jammu and Kashmir](#) and Former [Minister of State](#), Railways and Communication.^[36]
- Jay Chaudhry,^[37] CEO and Founder of [ZScaler](#)
- Varun Grover, National Film Award-winning Lyricist and Songwriter. Famous for writing the songs of [Gangs of Wasseypur](#).^{[38][39][40]}
- Thomas Anantharaman, one of the 3-member team at [IBM](#) who developed IBM [Deep Blue](#) supercomputer.
- Kota Harinarayana,^[41] a [Padma Shri](#) awardee and distinguished scientist at [DRDO](#)
- Nikesh Arora, CEO at Palo Alto Networks, Former President at Softbank, Ex-Senior Vice President and Chief Business Officer at [Google](#).^[42]
- Ram Charan, renowned management consultant and Economic Times Global Indian of the Year, 2010.
- A B Pandit, Vice Chancellor Of [Institute Of Chemical Technology Mumbai](#)
- Nikku Madhusudhan, Professor of Astrophysics and Exoplanetary Science of [Institute of Astronomy, University of Cambridge](#)

Alma Communiqué^[edit]

The Alma Communiqué is the official alumni newsletter of IIT (BHU), Varanasi prepared by the Office of Dean (Resource and Alumni) and the Student Alumni Interaction Cell (SAIC).^[43] It is a monthly newsletter (previously bi-annual), which aims to apprise the alumni of the various happenings in IIT (BHU), Varanasi.

IIT (BHU) Chronicle^[edit]

The IIT (BHU) Chronicle is a monthly [e-magazine](#) published by the IITBHU Global Alumni Association. It was first published in May 2005.^[44] It provides an account of events at the institute as well as notable achievements of members of the alumni community. It also publishes news and articles, sourced from several published sources, stating recent developments around the

world. The magazine is published around the 25th of each month. It is emailed to over 11,000 alumni, students and faculty of the institute.^[45]

Controversies

[\[edit\]](#)

On 2 November 2023, around 01:30 AM three men on a motorcycle harassed and [gang raped](#) a girl student.^[46] Following this, massive protests broke out at IIT BHU demanding safety and security for students.^{[47][48][49][50][51]} On 31 December 2023, [Varanasi Police](#) arrested three accused who are said to be the officials of the [BJP IT Cell](#).^[52]

Indian Institutes of Technology

[44 languages](#)

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"IIT" redirects here. For other uses, see [IIT \(disambiguation\)](#).

Other name IIT or IITs (plural)

Type Public Technical Institute

Established 15 May 1950
(73 years ago)

Parent institution Ministry of Education,
Government of India

Budget ₹10,324.5 crore (US\$1.3 billion)

(FY2024–25 est.)^[1]

Location 23 cities in India

Language English

Website www.iitsystem.ac.in



Madras

Delhi



Guwahati



Kanpur



Kharagpur



Bombay



Roorkee



Varanasi



Bhubaneswar



Gandhinagar



Hyderabad



Indore



Jodhpur





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Location of the 23 IITs

The **Indian Institutes of Technology (IITs)** are a network of engineering and technology institutions in India. Established in 1950, they are renowned for their academic excellence. They are under the ownership of the **Ministry of Education** of the **Government of India** and are governed by the **Institutes of Technology Act, 1961**. The Act declares them as **Institutes of National Importance** and lays down their powers, duties, and framework for governance.

as the country's premier institutions in the field of technology.^{[2][3]} The act currently lists twenty-three IITs.^[4] Each IIT has autonomy and is linked to others through a common council called the IIT Council, which oversees their administration. The [Minister of Education](#) of India is the [ex officio](#) chairperson of the IIT Council.^[5]

List of all Indian Institutes of Technology[\[edit\]](#)

No.	Name	Abbreviation	Founded	Converted as IIT	State/UT	Website
1	IIT Kharagpur	IITKGP	1951	1951	West Bengal	www.iitkgp.ac.in
2	IIT Bombay	IITB	1958	1958	Maharashtra	www.iitb.ac.in
3	IIT Madras	IITM	1959	1959	Tamil Nadu	www.iitm.ac.in
4	IIT Kanpur	IITK	1959	1959	Uttar Pradesh	www.iitk.ac.in
5	IIT Delhi	IITD	1961	1961	Delhi	home.iitd.ac.in
6	IIT Guwahati	IITG	1994	1995	Assam	www.iitg.ac.in
7	IIT Roorkee	IITR	1847	2002 ^[8]	Uttarakhand	www.iitr.ac.in

8	IIT Ropar	IITRPR	2008	2008	Punjab	www.iitrpr.ac.in
9	IIT Bhubaneswar	IITBBS	2008	2008	Odisha	www.iitbbs.ac.in
10	IIT Gandhinagar	IITGN	2008	2008	Gujarat	www.iitgn.ac.in
11	IIT Hyderabad	IITH	2008	2008	Telangana	www.iith.ac.in
12	IIT Jodhpur	IITJ	2008	2008	Rajasthan	www.iitj.ac.in
13	IIT Patna	IITP	2008	2008	Bihar	www.iitp.ac.in
14	IIT Indore	IITI	2009	2009	Madhya Pradesh	www.iiti.ac.in
15	IIT Mandi	IITMD	2009	2009	Himachal Pradesh	www.iitmandi.ac.in
16	IIT Varanasi	IIT BHU	1919	2012 ^[9]	Uttar Pradesh	www.iitbhu.ac.in
17	IIT Palakkad	IITPKD	2015 ^[10]	2015	Kerala	iitpkd.ac.in

18	IIT Tirupati	IITT	2015 ^[11]	2015	Andhra Pradesh	www.iittp.ac.in
19	IIT Dhanbad	IIT DHN	1926	2016 ^[12]	Jharkhand	www.iitism.ac.in
20	IIT Bhilai	IITBH	2016 ^[13]	2016	Chhattisgarh	www.iitbhilai.ac.in
21	IIT Dharwad	IITDH	2016 ^[14]	2016	Karnataka	iitdh.ac.in
22	IIT Jammu	IITJMU	2016 ^[15]	2016	Jammu and Kashmir	www.iitjammu.ac.in
23	IIT Goa	IIT GOA	2016 ^[16]	2016	Goa	iitgoa.ac.in

History[edit]



The office of the Hijli Detention Camp served as the first academic building of [IIT Kharagpur](#).



Library at [IIT BHU](#)



[IIT Guwahati](#), established in 1994



[IIT Madras Research Park](#) at Chennai

Main article: [History of Indian Institutes of Technology](#)

In the late 1940s, a 22-member committee, headed by [Nalini Ranjan Sarkar](#), recommended the establishment of these institutions in various parts of India, along the lines of the [Massachusetts Institute of Technology](#) (MIT), with [affiliated](#) secondary institutions.^[17]

The first Indian Institute of Technology was founded in May 1950 at the site of the [Hijli Detention Camp](#) in Kharagpur, West Bengal.^[18] The name "Indian Institute of Technology" was adopted before the formal inauguration of the institute on 18 August 1951 by [Maulana Abul Kalam Azad](#).^[19]

On 15 September 1956, the Parliament of India passed the [Indian Institute of Technology \(Kharagpur\) Act](#), declaring it as an [Institute of National Importance](#). Jawaharlal Nehru, first Prime Minister of India, in the first convocation address of IIT Kharagpur in 1956, said:^[20]

Here in the place of that Hijli Detention Camp stands the fine monument of India, representing India's urges, India's future in the making. This picture seems to me symbolically of the changes coming to India.

On the recommendations of the Sarkar Committee, four campuses were established at [Bombay](#) (1958), [Madras](#) (1959), [Kanpur](#) (1959), and [Delhi](#) (1961). The location of these campuses was chosen to be scattered throughout India to prevent regional imbalance.^[21] The [Indian Institutes of Technology Act](#) was amended to reflect the addition of new IITs.^[22]

In the tenth meeting of IIT Council in 1972, it was also proposed to convert the then IT-BHU into an IIT and a committee was appointed by IIT Council for the purpose but because of political reasons, the desired conversion could not be achieved then.^[22] IT-BHU had been taking admissions through [Indian Institute of Technology Joint Entrance Examination \(IIT-JEE\)](#) for undergraduate courses and [Graduate Aptitude Test in Engineering \(GATE\)](#) for postgraduate courses since 1972. Finally, in 2012 the [Institute of Technology, Banaras Hindu University](#) was made a member of the IITs and renamed as [IIT \(BHU\) Varanasi](#).^[9]

Student agitations in the state of [Assam](#) made Prime Minister [Rajiv Gandhi](#) promise the creation of a new IIT in Assam. This led to the establishment of a sixth institution at [Guwahati](#) under the [Assam Accord](#) in 1994.

In 2001, the [University of Roorkee](#) was converted into IIT Roorkee.^[8] Over the past few years, there have been several developments toward establishing new IITs. On 1 October 2003, Prime Minister [Atal Bihari Vajpayee](#) announced plans to create more IITs "by upgrading existing academic institutions that have the necessary promise and potential".^[23] Subsequent developments led to the formation of the S K Joshi Committee, in November 2003, to guide the selection of the five institutions which would be converted into IITs. Based on the initial recommendations of the Sarkar Committee, it was decided that new IITs should be spread throughout the country. When the government expressed its willingness to correct this regional imbalance, 16 states demanded IITs. Since the S K Joshi Committee prescribed strict guidelines for institutions aspiring to be IITs,^[24] only seven colleges were selected for final consideration.^[25] Plans are also reported to open IITs outside India, although there has not been much progress in this regard.^[26] Eventually in the 11th [Five year plan](#), eight states were identified for establishment of new IITs.

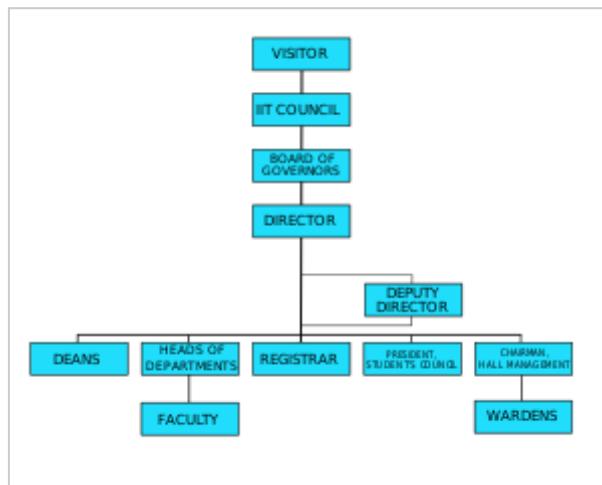
From 2008 to 2009, eight new IITs were set up in [Gandhinagar](#), [Jodhpur](#), [Hyderabad](#), [Indore](#), [Patna](#), [Bhubaneswar](#), [Ropar](#), and [Mandi](#).

In 2015 to 2016, six new IITs in [Tirupati](#), [Palakkad](#), [Dharwad](#), [Bhilai](#), [Goa](#), and [Jammu](#), approved through a 2016 bill amendment, were founded, along with the conversion of [Indian School of Mines Dhanbad](#) into [IIT , Dhanbad](#).^[12]

The entire allocation by the central government for the 2017-18 budget for all Indian Institutes of Technology (IITs) was slightly over ₹70 billion (US\$880 million). However, the aggregate money spent by Indian students for tertiary education in the United States was about six times more than what the central government spends on all IITs.^[27]

In June 2023, education officials of India and [Tanzania](#) announced that the first foreign IIT campus would be established on the Tanzanian autonomous territory of [Zanzibar](#), as a satellite campus of [IIT Madras](#). The campus is scheduled to begin offering classes in October 2023.^[28]

Organisational Structure[\[edit\]](#)



Organisational structure of IITs

The [President of India](#) is the *ex officio* [Visitor](#),^[29] and has [residual powers](#). Directly under the President is the IIT Council, comprising minister-in-charge of technical education in the Union Government, the Chairmen of all IITs, the Directors of all IITs, the Chairman of the [University Grants Commission](#), the Director General of [CSIR](#), the Chairman of [IISc](#), the Director of IISc, three members of Parliament, the Joint Council Secretary of Ministry of Education, and three appointees each of the Union Government, [AICTE](#), and the Visitor.^[30]

Under the IIT Council is the *Board of Governors* of each IIT. Under the Board of Governors is the *Director*, who is the chief academic and executive officer of the IIT.^[31] Under the Director, in the organisational structure, comes the *Deputy Director*. Under the Director and the deputy director, come the [Deans](#), Heads of Departments, [Registrar](#), President of the

Students' Council, and Chairman of the Hall Management Committee. The *Registrar* is the chief administrative officer of the IIT and overviews the day-to-day operations.^[31] Below the Heads of Department (HOD) are the faculty members (Professors, Associate Professors, and Assistant Professors). The *Wardens* come under the Chairman of the Hall Management Committee.^[32]

The Institutes of Technology Act^[edit]

Main article: [Institutes of Technology Act](#)

The Institute of Technology Act (parliamentary legislation) gives legal status, including degree-granting powers, to the Indian Institutes of Technology (IITs). It was notified in the gazette as Act Number 59 of 1961 on 20 December 1961 and came into effect on 1 April 1962. The Act also declares these institutes as **Institutes of National Importance**.

Academics^[edit]



[IIT Bombay](#)



Central Library, [IIT Roorkee](#)

See also: [Education in India](#)

The IITs receive comparatively higher grants than other engineering colleges in India.^[33] While the total government funding to most other engineering colleges is around ₹ 100–200 million (\$2–4 million) per year, the amount varies between ₹ 900–1300 million (\$19–27

million) per year for each IIT.^[25] Other sources of funds include student fees and research funding from industry and contributions from the alumni. The faculty-to-student ratio in the IITs is between 1:6 and 1:8.^[34] The Standing Committee of IIT Council (SCIC) prescribes the lower limit for faculty-to-student ratio as 1:9, applied department wise. The IITs subsidize undergraduate student fees by approximately 80% and provide scholarships to all *Master of Technology* students and *Research Scholars (PhD)* to encourage students for higher studies, per the recommendations of the Thacker Committee (1959–1961).^[35] The cost borne by undergraduate students is around ₹180,000 per year.^[36] Students from the OBC, ST, SC categories, female students as well as physically challenged students are also entitled to scholarships.^{[37][38]}

The various IITs function autonomously, and their special status as *Institutes of National Importance* facilitates the smooth running of IITs, virtually free from both regional as well as student politics. Such autonomy means that IITs can create their curricula and adapt rapidly to the changes in educational requirements, free from bureaucratic hurdles. The government has no direct control over internal policy decisions of IITs (like faculty recruitment and curricula) but has representation on the *IIT Council*. The medium of instruction in all IITs is English.^[39] The electronic libraries allow students to access online journals and periodicals. The IITs and IISc, Bengaluru have taken an initiative along with Ministry of Education to provide free online videos of actual lectures of different disciplines under *National Programme on Technology Enhanced Learning*. This initiative is undertaken to make quality education accessible to all students.^[40]

The academic policies of each IIT are decided by its *Senate*. This comprises all professors of the IIT and student representatives. Unlike many Western universities that have an elected senate, the IITs have an academic senate. It controls and approves the curriculum, courses, examinations and results, and appoints committees to look into specific academic matters. The teaching, training and research activities of the institute are periodically reviewed by the senate to maintain educational standards.^[41] The *Director* of an IIT is the ex-officio Chairman of the Senate.

All the IITs follow the credits system of performance evaluation, with proportional weighting of courses based on their importance. The total marks (usually out of 100) form the basis of *grades*, with a grade value (out of 10) assigned to a range of marks. Sometimes, relative grading is done considering the overall performance of the whole class. For each semester, the students are graded on a scale of 0 to 10 based on their performance, by taking a weighted average of the grade points from all the courses, with their respective credit points. Each semester evaluation is done independently and then the weighted average over all semesters is used to calculate the cumulative *Grade Point Average* (known as CGPA or CPI—Cumulative Performance Index).

Undergraduate education degrees^[edit]

The [Bachelor of Technology](#) (BTech) degree is the most common undergraduate degree in the IITs in terms of student enrollment,^[citation needed] although [Bachelor of Science](#) (BS) degree, dual degrees integrating [Master of Science](#) or [Master of Arts](#) are also offered. The BTech course is based on a 4-year program with eight semesters,^[42] while the Dual Degree and Integrated courses are 5-year programs with ten semesters. In all IITs, the first year of BTech and Dual Degree courses are marked by a common course structure for all the students, though in some IITs, a single department introduction-related course is also included.^[43] The common courses include the basics from most of the departments like Computers, Electronics, Mechanics, Chemistry, Electrical and Physics. At the end of the first year (the end of the first semester at IIT Madras, IIT Hyderabad, IIT Bhilai, IIT Palakkad, and IIT Roorkee), an option to change departments is given to meritorious students based on their performance in the first two semesters.^[44] Few such changes ultimately take place as the criteria for them are usually strict,^[44] limited to the most meritorious students.

From the second year onward, the students study subjects exclusively from their respective departments.^[45] In addition to these, the students have to take compulsory advanced courses from other departments to broaden their education. Separate compulsory courses from [humanities](#) and [social sciences](#) departments, and sometimes management courses are also enforced.^[46] In the last year of their studies, most of the students are placed into industries and organisations via the placement process of the respective IIT, though some students opt out of this either when going for higher studies or when they take up jobs by applying to the companies directly.^[47]

Postgraduate education

[\[edit\]](#)

Master's degrees and postgraduate diplomas

[\[edit\]](#)

The IITs offer several postgraduate programs including [Master of Technology \(MTech\)](#), [Master of Business Administration \(MBA\)](#), and [Master of Science \(MSc\)](#). Some IITs offer specialised graduate programmes such as [Master of Design \(M.Des.\)](#), the Post Graduate Diploma in Information Technology (PGDIT), [Masters in Medical Science and Technology \(MMST\)](#), [Masters in City Planning \(MCP\)](#), [Master of Arts \(MA\)](#), Postgraduate Diploma in [intellectual property](#) Law (PGDIPL), and the Postgraduate Diploma in Maritime Operation & Management (PGDMOM).

Some of the IITs offer an M.S. (by research) program; the MTech and M.S. are similar to the US universities' non-thesis (course-based) and thesis (research-based) masters programs respectively. Admissions to master's programs in engineering are made using scores of the [Graduate Aptitude Test in Engineering](#) (GATE), while those to master's programs in science are made using scores of the [Joint Admission Test for M.Sc.](#) (JAM).

Several IITs have schools of management offering master's degrees in management or business administration.

In April 2015, IIT Bombay launched the first U.S.-India joint EMBA program alongside [Washington University in St. Louis](#).^[48]

Bachelors-Masters dual degrees[\[edit\]](#)

The IITs also offer an unconventional BTech and MTech integrated educational program called "Dual Degree". It integrates undergraduate and postgraduate studies in selected areas of specialisation. It is completed in five years^[49] as against six years in conventional BTech (four years) followed by an MTech (two years).^[50] Integrated Master of Science programs are also offered at few IITs which integrates the Undergraduate and Postgraduate studies in Science streams in a single degree program against the conventional university system. These programs were started to allow its graduates to complete postgraduate studies from IIT rather than having to go to another institute.

Doctoral[\[edit\]](#)

The IITs also offer the Doctor of Philosophy degree (PhD) as part of their [doctoral education programme](#). In it, the candidates are given a topic of academic interest by the ins or have to work on a consultancy project given by the industries. The duration of the program is usually unspecified and depends on the specific discipline. PhD candidates have to submit a [dissertation](#) as well as provide an oral defence for their thesis. [Teaching Assistantships](#) (TA) and [Research Assistantships](#) (RA) are often provided.

The IITs, along with NITs and IISc, account for nearly 80% of all engineering PhDs in India.^[51] IITs now allow admission in PhD programs without the mandatory [GATE](#) score.^{[52][53]}

Culture and student life[\[edit\]](#)

All the IITs provide on-campus residential facilities to the students, research scholars and faculty. The students live in [hostels](#) (sometimes referred to as *halls*) throughout their stay in the IIT. Students in all IITs must choose among [National Cadet Corps](#) (NCC), [National Service Scheme](#) (NSS) and [National Sports Organisation](#) (NSO) in their first years.^[54] All the IITs have sports grounds for [basketball](#), [cricket](#), [football \(soccer\)](#), [hockey](#), [volleyball](#), [lawn tennis](#), [badminton](#), athletics and swimming pools for aquatic events. Usually, the hostels also have their own sports grounds.

Moreover, an [Inter IIT Sports Meet](#) is organised annually where participants from all 23 IITs contest for the General Championship Trophy in 13 different sports. Along with Inter IIT Cultural Meet and Tech Meet , all of them generally happening on various dates in the month of December every year.

Technical and cultural festivals[\[edit\]](#)



A concert at the 2012 [Mood Indigo](#)



Rocknite in [Saarang](#) at IIT Madras

Further information: [List of cultural and technical festivals in IITs and NITs](#)

All IITs organize annual technical festivals, typically lasting three or four days. The technical festivals are [Shaastra](#) (IIT Madras), [Kshitij](#) (IIT Kharagpur), [Techfest](#) (IIT Bombay), [Technex](#) (IIT-BHU Varanasi), [Cognizance](#) (IIT Roorkee), [Concetto](#) ([IIT-ISM Dhanbad](#)), [Tirutsava](#) ([IIT Tirupati](#)), [Nvision](#) (IIT Hyderabad), [Meraz](#) (IIT Bhilai), [Amalthea](#), (IIT Gandhinagar), [Techkriti](#) (IIT Kanpur), [Tryst](#) (IIT Delhi), [Techniche](#) (IIT Guwahati), [Wissenaire](#) (IIT Bhubaneswar), [Technunctus](#) (IIT Jammu), [Exodia](#) (IIT Mandi), [Fluxus](#) (IIT Indore), [Celesta](#) (IIT Patna) and [IGNUS](#) (IIT Jodhpur). Petrichor(IIT Palakkad). Most of them are organized in January or March. Techfest (IIT Bombay) is also one of the most popular and largest technical festivals in Asia in terms of participants and prize money involved. It has been granted patronage from the United Nations Educational, Scientific and Cultural Organisation ([UNESCO](#)) for providing a platform for students to showcase their talent in science and technology. Shaastra holds the distinction of being the first student-managed event in the world to

implement a formal [Quality Management System](#), earning [ISO 9001:2000](#) certification.^[55] Kshitij, which is branded as a techno-management festival due to its emphasis on both technology and management, is the largest of these festivals by sponsorship money.

Annual [cultural festivals](#) are also organized by the IITs and last three to four days. These include [Thomso](#) (IIT Roorkee), [Kashiyatra](#) (IIT BHU Varanasi), [Alcheringa](#) (IIT Guwahati), [Exodia](#) (IIT Mandi), [Saarang](#) and [Paradox](#) (annual fests of IIT Madras BTech and BS Degree respectively), [Spring Fest](#) (IIT Kharagpur, also known as SF), [Rendezvous](#) (IIT Delhi), [Meraz](#) (IIT Bhilai), [Tirutsava](#) (IIT Tirupati), [Srijan](#), (earlier known as [Saturnalia](#), IIT Dhanbad), [Tarang](#) (culfest) (previously Rave), [Anwesha](#) (IIT Patna), [SPANDAN](#) (IIT Jodhpur), [Renao](#) (IIT Jammu), [Petrichor](#) (IIT Palakkad), [Blithchron](#) (IIT Gandhinagar), [ELAN](#) (IIT Hyderabad), [Alma Fiesta](#) (IIT Bhubaneswar), [Mood Indigo](#) (IIT Bombay, also known as Mood-I), [Antaragni](#) (IIT Kanpur) and [Zeitgeist](#) (IIT Ropar).

Academic rankings[edit]

IITs have generally ranked above all other engineering colleges in India for Engineering. According to [Outlook India's Top Engineering Colleges of 2017](#), the top four engineering colleges within India were IITs.^[56] In 2019 [QS World University Ranking](#), IIT Bombay ranked highest at 162, followed by IIT Delhi (172), IIT Madras (264), IIT Kanpur (283), IIT Kharagpur (295), IIT Roorkee (381) and IIT Guwahati (472).^[57] In the 2022 [NIRF](#) rankings published by [Ministry of Education, India](#), **IIT Madras has been ranked 1st** for seven consecutive years in the Engineering Category and for four consecutive years in the Overall Category.^[58]

Name	2023 NIRF^[59]	2022 NIRF^[60]	2021 NIRF^[61]	2020 NIRF^[62]	2019 NIRF^[63]	2020 QSRW^[64]	2020 QS^[65]	2020 WORL^[66]	2020 QS^[67]	2020 QS^[68]	2020 QS^[69]	2020 QS^[70]	2020 QS^[71]	2020 QS^[72]	2020 QS^[73]	2020 QS^[74]	2020 QS^[75]	2020 QS^[76]	2020 QS^[77]	2020 QS^[78]	2020 QS^[79]	2020 QS^[80]	2020 QS^[81]	2020 QS^[82]	2020 QS^[83]	2020 QS^[84]	2020 QS^[85]	2020 QS^[86]	2020 QS^[87]	2020 QS^[88]	2020 QS^[89]	2020 QS^[90]	2020 QS^[91]	2020 QS^[92]	2020 QS^[93]	2020 QS^[94]	2020 QS^[95]	2020 QS^[96]	2020 QS^[97]	2020 QS^[98]	2020 QS^[99]	2020 QS^[100]	2020 QS^[101]	2020 QS^[102]	2020 QS^[103]	2020 QS^[104]	2020 QS^[105]	2020 QS^[106]	2020 QS^[107]	2020 QS^[108]	2020 QS^[109]	2020 QS^[110]	2020 QS^[111]	2020 QS^[112]	2020 QS^[113]	2020 QS^[114]	2020 QS^[115]	2020 QS^[116]	2020 QS^[117]	2020 QS^[118]	2020 QS^[119]	2020 QS^[120]	2020 QS^[121]	2020 QS^[122]	2020 QS^[123]	2020 QS^[124]	2020 QS^[125]	2020 QS^[126]	2020 QS^[127]	2020 QS^[128]	2020 QS^[129]	2020 QS^[130]	2020 QS^[131]	2020 QS^[132]	2020 QS^[133]	2020 QS^[134]	2020 QS^[135]	2020 QS^[136]	2020 QS^[137]	2020 QS^[138]	2020 QS^[139]	2020 QS^[140]	2020 QS^[141]	2020 QS^[142]	2020 QS^[143]	2020 QS^[144]	2020 QS^[145]	2020 QS^[146]	2020 QS^[147]	2020 QS^[148]	2020 QS^[149]	2020 QS^[150]	2020 QS^[151]	2020 QS^[152]	2020 QS^[153]	2020 QS^[154]	2020 QS^[155]	2020 QS^[156]	2020 QS^[157]	2020 QS^[158]	2020 QS^[159]	2020 QS^[160]	2020 QS^[161]	2020 QS^[162]	2020 QS^[163]	2020 QS^[164]	2020 QS^[165]	2020 QS^[166]	2020 QS^[167]	2020 QS^[168]	2020 QS^[169]	2020 QS^[170]	2020 QS^[171]	2020 QS^[172]	2020 QS^[173]	2020 QS^[174]	2020 QS^[175]	2020 QS^[176]	2020 QS^[177]	2020 QS^[178]	2020 QS^[179]	2020 QS^[180]	2020 QS^[181]	2020 QS^[182]	2020 QS^[183]	2020 QS^[184]	2020 QS^[185]	2020 QS^[186]	2020 QS^[187]	2020 QS^[188]	2020 QS^[189]	2020 QS^[190]	2020 QS^[191]	2020 QS^[192]	2020 QS^[193]	2020 QS^[194]	2020 QS^[195]	2020 QS^[196]	2020 QS^[197]	2020 QS^[198]	2020 QS^[199]	2020 QS^[200]	2020 QS^[201]	2020 QS^[202]	2020 QS^[203]	2020 QS^[204]	2020 QS^[205]	2020 QS^[206]	2020 QS^[207]	2020 QS^[208]	2020 QS^[209]	2020 QS^[210]	2020 QS^[211]	2020 QS^[212]	2020 QS^[213]	2020 QS^[214]	2020 QS^[215]	2020 QS^[216]	2020 QS^[217]	2020 QS^[218]	2020 QS^[219]	2020 QS^[220]	2020 QS^[221]	2020 QS^[222]	2020 QS^[223]	2020 QS^[224]	2020 QS^[225]	2020 QS^[226]	2020 QS^[227]	2020 QS^[228]	2020 QS^[229]	2020 QS^[230]	2020 QS^[231]	2020 QS^[232]	2020 QS^[233]	2020 QS^[234]	2020 QS^[235]	2020 QS^[236]	2020 QS^[237]	2020 QS^[238]	2020 QS^[239]	2020 QS^[240]	2020 QS^[241]	2020 QS^[242]	2020 QS^[243]	2020 QS^[244]	2020 QS^[245]	2020 QS^[246]	2020 QS^[247]	2020 QS^[248]	2020 QS^[249]	2020 QS^[250]	2020 QS^[251]	2020 QS^[252]	2020 QS^[253]	2020 QS^[254]	2020 QS^[255]	2020 QS^[256]	2020 QS^[257]	2020 QS^[258]	2020 QS^[259]	2020 QS^[260]	2020 QS^[261]	2020 QS^[262]	2020 QS^[263]	2020 QS^[264]	2020 QS^[265]	2020 QS^[266]	2020 QS^[267]	2020 QS^[268]	2020 QS^[269]	2020 QS^[270]	2020 QS^[271]	2020 QS^[272]	2020 QS^[273]	2020 QS^[274]	2020 QS^[275]	2020 QS^[276]	2020 QS^[277]	2020 QS^[278]	2020 QS^[279]	2020 QS^[280]	2020 QS^[281]	2020 QS^[282]	2020 QS^[283]	2020 QS^[284]	2020 QS^[285]	2020 QS^[286]	2020 QS^[287]	2020 QS^[288]	2020 QS^[289]	2020 QS^[290]	2020 QS^[291]	2020 QS^[292]	2020 QS^[293]	2020 QS^[294]	2020 QS^[295]	2020 QS^[296]	2020 QS^[297]	2020 QS^[298]	2020 QS^[299]	2020 QS^[300]	2020 QS^[301]	2020 QS^[302]	2020 QS^[303]	2020 QS^[304]	2020 QS^[305]	2020 QS^[306]	2020 QS^[307]	2020 QS^[308]	2020 QS^[309]	2020 QS^[310]	2020 QS^[311]	2020 QS^[312]	2020 QS^[313]	2020 QS^[314]	2020 QS^[315]	2020 QS^[316]	2020 QS^[317]	2020 QS^[318]	2020 QS^[319]	2020 QS^[320]	2020 QS^[321]	2020 QS^[322]	2020 QS^[323]	2020 QS^[324]	2020 QS^[325]	2020 QS^[326]	2020 QS^[327]	2020 QS^[328]	2020 QS^[329]	2020 QS^[330]	2020 QS^[331]	2020 QS^[332]	2020 QS^[333]	2020 QS^[334]	2020 QS^[335]	2020 QS^[336]	2020 QS^[337]	2020 QS^[338]	2020 QS^[339]	2020 QS^[340]	2020 QS^[341]	2020 QS^[342]	2020 QS^[343]	2020 QS^[344]	2020 QS^[345]	2020 QS^[346]	2020 QS^[347]	2020 QS^[348]	2020 QS^[349]	2020 QS^[350]	2020 QS^[351]	2020 QS^[352]	2020 QS^[353]	2020 QS^[354]	2020 QS^[355]	2020 QS^[356]	2020 QS^[357]	2020 QS^[358]	2020 QS^[359]	2020 QS^[360]	2020 QS^[361]	2020 QS^[362]	2020 QS^[363]	2020 QS^[364]	2020 QS^[365]	2020 QS^[366]	2020 QS^[367]	2020 QS^[368]	2020 QS^[369]	2020 QS^[370]	2020 QS^[371]	2020 QS^[372]	2020 QS^[373]	2020 QS^[374]	2020 QS^[375]	2020 QS^[376]	2020 QS^[377]	2020 QS^[378]	2020 QS^[379]	2020 QS^[380]	2020 QS^[381]	2020 QS^[382]	2020 QS^[383]	2020 QS^[384]	2020 QS^[385]	2020 QS^[386]	2020 QS^[387]	2020 QS^[388]	2020 QS^[389]	2020 QS^[390]	2020 QS^[391]	2020 QS^[392]	2020 QS^[393]	2020 QS^[394]	2020 QS^[395]	2020 QS^[396]	2020 QS^[397]	2020 QS^[398]	2020 QS^[399]	2020 QS^[400]	2020 QS^[401]	2020 QS^[402]	2020 QS^[403]	2020 QS^[404]	2020 QS^[405]	2020 QS^[406]	2020 QS^[407]	2020 QS^[408]	2020 QS^[409]	2020 QS^[410]	2020 QS^[411]	2020 QS^[412]	2020 QS^[413]	2020 QS^[414]	2020 QS^[415]	2020 QS^[416]	2020 QS^[417]	2020 QS^[418]	2020 QS^[419]	2020 QS^[420]	2020 QS^[421]	2020 QS^[422]	2020 QS^[423]	2020 QS^[424]	2020 QS^[425]	2020 QS^[426]	2020 QS^[427]	2020 QS^[428]	2020 QS^[429]	2020 QS^[430]	2020 QS^[431]	2020 QS^[432]	2020 QS^[433]	2020 QS^[434]	2020 QS^[435]	2020 QS^[436]	2020 QS^[437]	2020 QS^[438]	2020 QS^[439]	2020 QS^[440]	2020 QS^[441]	2020 QS^[442]	2020 QS^[443]	2020 QS^[444]	2020 QS^[445]	2020 QS^[446]	2020 QS^[447]	2020 QS^[448]	2020 QS^[449]	2020 QS^[450]	2020 QS^[451]	2020 QS^[452]	2020 QS^[453]	2020 QS^[454]	2020 QS^[455]	2020 QS^[456]	2020 QS^[457]	2020 QS^[458]	2020 QS^[459]	2020 QS^[460]	2020 QS^[461]	2020 QS^[462]	2020 QS^[463]	2020 QS^[464]	2020 QS^[465]	2020 QS^[466]	2020 QS^[467]	2020 QS^[468]	2020 QS^[469]	2020 QS^[470]	2020 QS^[471]	2020 QS^[472]	2020 QS^[473]	2020 QS^[474]	2020 QS^[475]	2020 QS^[476]	2020 QS^[477]	2020 QS^[478]	2020 QS^[479]	2020 QS^[480]	2020 QS^[481]	2020 QS^[482]	2020 QS^[483]	2020 QS^[484]	2020 QS^[485]	2020 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IIT Madr as	1	1	1	1	250	255	275	271	54	4	601 -80 0 (20 20)	125 (202 0)	
IIT Bom bay	3	3	4	4	172	177	172	152	42	1	401 -50 0 (20 20)	69 (202 0)	
IIT Delhi	2	4	3	3	174	185	193	182	45	3	401 -50 0 (20 20)	67 (202 0)	
IIT Kanp ur	4	5	6	6	264	277	350	291	64	6	601 -80 0 (20 20)	125 (202 0)	
IIT Khar agpu r	6	6	5	5	270	280	314	281	60	5	401 -50 0 (20 20)	59 (202 0)	
IIT Roor kee	5	7	9	8	369	400	383	383	109	9	501 -60 0 (20 20)	83 (202 0)	

IIT Guwahati	7	8	7	9	384	395	470	491	119	10	601-800 (2020)	160 (2020)	
IIT Hyderabad	8	16	17	22	581-590	N/A			224	15	601-800 (2021)	144 (2021)	
IIT (BHU) Varanasi	15	28	26	28	N/A				281-290	N/A	N/A	N/A	
IIT (ISM) Dhanbad	17	26	22	25	N/A				251-260	46	100-1-1200 (2022)	201-250 (2021)	
IIT Indore	14	30	23	N/A	396				178	13	401-500 (2022)	78 (2021)	
IIT Mandi	33	82	67	44	N/A				N/A	N/A	100-1-1200 (2022)	N/A	

IIT Bhilai	81												
IIT Dharwad	93												
IIT Jammu	67												
IIT Goa	N/A												

Reservation Policy and Discrimination [\[edit\]](#)

IITs practice affirmative action and offer reservation to the "backward and weaker sections" of the society that includes SC/ST/OBC-NCL/EWS/PWD/Girl candidates. About 50% of seats are reserved for candidates holding backward-caste certificates, and 10% seats are further reserved for candidates from general (unreserved) category who fulfill the economically weaker section criteria. Furthermore, students from reserved categories pay significantly lower fees compared to students from the unreserved category.

Despite the implementation of reservation policies, provision of economic assistance, and enforcement of the [Scheduled Caste and Scheduled Tribe \(Prevention of Atrocities\) Act, 1989](#), IITs failed to stem out caste and religion based discrimination among its students and faculty. Discrimination against dalits, tribals and minorities has become a plague in these institutions leading to suicides among the students from these marginalized communities. Very little to none has been done to prevent discrimination on its campuses.^{[\[71\]](#)} [\[72\]](#)[\[73\]](#)[\[74\]](#)[\[75\]](#)[\[76\]](#)

Criticism [\[edit\]](#)

The IITs have faced criticism from within and outside academia. Major concerns include allegations that they encourage [brain drain](#) and that their stringent entrance examinations encourage coaching colleges and put heavy pressure on the student's body. Recently some prominent IITians have also questioned the quality of teaching and research in IITs.^{[77][78]}

With the tripling the number of IITs in recent decades, the newly created institutes have struggled to establish themselves compared to their peers. A 2021 report by [Comptroller and Auditor General of India](#) criticized the newer IITs for not meeting targets for research, faculty and student recruitment, students retention, as well as for being beset with infrastructure delays.^{[79][80]}

In the recent past, the number of student suicides has attracted significant attention.^[81]

Brain drain[edit]

Among the criticisms of the IIT system by the media and academia, a common notion is that it encourages [brain drain](#). Until [liberalisation](#) started in the early 1990s, India experienced large scale emigration of IIT graduates to developed countries, especially to the United States. Since 1953, nearly twenty-five thousand IIT graduates have settled in the US.^[82] Since the US benefited from subsidized education in IITs at the cost of Indian taxpayers' money, critics say that subsidising education in IITs is useless. Others support the emigration of graduates, arguing that the capital sent home by the IIT graduates has been a major source of the expansion of [foreign exchange](#) reserves for India, which, until the 1990s, had a substantial [trade deficit](#).^[citation needed] A 2023 study by the [National Bureau of Economic Research](#) found that among the top 1,000 JEE scorers, 36% migrated abroad, while for the top 100 scorers, the rate was 62%, primarily to the U.S. and for graduate school.^[83]

This trend has been reversed somewhat (dubbed the [reverse brain drain](#)) as hundreds of IIT graduates, who have pursued further studies in the US, started returning to India in the 1990s.^[84] The extent of intellectual loss receded substantially over the 1990s and 2000s, with the percentage of students going abroad dropping from as high as 70% at one time to around 30% in 2005.^[84] This is largely attributed to the liberalization of the [Indian economy](#) and the opening of previously closed markets. Government initiatives are encouraging IIT students into entrepreneurship programs and are increasing foreign investment. Emerging scientific and manufacturing industries, and [outsourcing](#) of technical jobs from North America and Western Europe have created opportunities for aspiring graduates in India. Additionally, IIT alumni are giving back generously to their parent institutions.^[85]

Entrance competition[edit]

The highly competitive examination in the form of [IIT-JEE](#) has led to the establishment of a large number of coaching institutes throughout the country that provide intensive, and specific preparation for the IIT-JEE for substantial fees. It is argued that this favours students from specific regions and richer backgrounds. Some coaching institutes say that they have individually coached nearly 800 successful candidates year after year.^[86] According to some estimates, nearly 95% of all students who clear the IIT-JEE had joined coaching classes.^[87] Indeed, this was the case regarding preparation for IIT entrance exams even decades ago. In a January 2010 lecture at the [Indian Institute of Science](#), the 2009 Nobel laureate in Chemistry, [Venkatraman Ramakrishnan](#) revealed that he failed to get a seat at any of the Indian engineering and medical colleges.^[88] He also said that his parents, being old-fashioned, did not believe in coaching classes to prepare for the IIT entrance exam and considered them to be "nonsense".^[88]

In a documentary aired by [CBS](#), [Vinod Khosla](#), co-founder of [Sun Microsystems](#) states, "The IITs probably are the hardest schools in the world to get into, to the best of my knowledge".^[89] The documentary further concludes, "Put [Harvard](#), [MIT](#), and [Princeton](#) together, and you begin to get an idea of the status of IIT in India" to depict the competition as well as demand for the elite institutes.

Not all children are of a similar aptitude level and may be skilled in different paradigms and fields. This has led to criticism of the way the examinations are conducted and the way a student is forced in the Indian community. The IIT-JEE format was restructured in 2006 following these complaints.^[90] After the change to the objective pattern of questioning, even the students who initially considered themselves not fit for subjective pattern of IIT-JEE decided to take the examination. Though the restructuring was meant to reduce the dependence of students on coaching classes, it led to an increase in students registering for coaching classes.^[91] Some people (mostly IIT graduates) have criticized the changed pattern of the IIT-JEE. They reason that while IIT-JEE is traditionally used to test students' understanding of fundamentals and their ability to apply them to solve tough unseen problems, the current pattern does not stress much on the application part and might lead to a reduced quality of students.^[92]

IIT-JEE is conducted only in English and [Hindi](#), making it harder for students with regional languages as their main language. In September 2011, the [Gujarat High Court](#) has acted on a [Public Interest Litigation](#) by the [Gujarati Sahitya Parishad](#), for conducting the exams in Gujarati.^[93] A second petition was made in October by Navsari's Sayaji Vaibhav Sarvajanik Pustakalaya Trust.^[94] Another petition was made at the Madras High Court for conducting the exam in Tamil. In the petition, it was claimed that not conducting the exam in the regional languages violates article 14 of the [Constitution of India](#).^[95] IIT council recommended major changes in entrance examination structure which is effective from 2017 onwards.^[96]

Indian Institute of Technology Bhilai

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	IIT Bhilai, Government Engineering College Campus, Old Dhamtari Road, Sejbarah, Raipur, Chhattishgarh, 492015
Contact Person For Admission:	Mr. Nihar Ranjan Barick
Designation:	Assistant Registrar (Academic Affairs)
Email:	admissions@iitbihilai.ac.in
Alternate Email:	ardoaa@iitbihilai.ac.in
Phone Nos:	0771-2973624
Fax No:	0771-2973601
Mobile No.:	

About the Institute

IIT Bhilai, located in the state of Chhattisgarh, is one of the youngest IITs established by the Ministry of Education (Government of India). The first academic session at IIT Bhilai started in August 2016, with the BTech program in three engineering disciplines, viz. Computer Science & Engineering, Electrical Engineering, and Mechanical Engineering. In the year 2020, another discipline in Data Science and Artificial Intelligence is added. The *seat matrix* mentioned below may be referred for details of the proposed intake for the academic session 2023-24.

Apart from BTech program, the institute offers Masters program in various science and engineering disciplines. Doctoral program is offered in all the disciplines of Engineering, Liberal arts, and Science disciplines available in the institute.

At present the institute has on its roster more than 60 extremely competent faculty members with vast experience of working in the top-ranking labs and universities in India and abroad. Detailed profile of the faculty members is available, department wise, in the [institute website](#)

Temporary Campus

IIT Bhilai is currently functional from its transit campus. Until the infrastructure of IIT Bhilai in permanent campus is ready, the institute will continue to function at the campus of Government Engineering College (GEC), Raipur. Raipur is the capital city of Chhattisgarh and is well connected by air, railways and roads.

The temporary campus is located at GEC Campus, Old Dhamtari Road, Sejbahar, Raipur – 492015, Chhattisgarh. The temporary campus is reachable in various ways as follows:

By air: The temporary campus is about 16 km from Swami Vivekananda Airport at Raipur.

By train: It is about 13 km from the Raipur Junction railway station.

By bus: It is about 12 km from Pandri main Bus Terminal, Raipur.

Permanent Campus:

The permanent campus of IIT Bhilai is being established as a waterfront campus in Kutelabhata village of Durg district. The construction work is at its full swing and the first stage of construction is expected to complete in a year. The permanent campus site is about 6 km from Durg Junction railway station, and about 50 km from Swami Vivekananda Airport at Raipur.

Fee Structure

—	BTech - FEE STRUCTURE FOR 2023-24
—	Tuition Fee
—	10
—	CoSA Fee
—	2,500
—	2,500
—	—
—	11
—	Medical Fee
—	1,000
—	1,000
—	

		500
-	12	
-	Other Fee	
-		6,000
-		6,000
-		3,000
-	Total (C) and (D)	
-		1,11,000
-		1,11,000
-		29,000
-	15	
-	Hostel Seat Rent	
-		1,750
-		1,750
-		875
-	16	
-	Establishment Fee	
-		9,500

—	9,500
—	4,750
—	17
—	Dining Fee**
—	23,200
—	23,200
—	11,600
—	Total (E)
—	34,950
—	34,950
—	17,225

*

— In addition to Medical Fee, all students are required to pay an insurance premium** - Rs. 1000/- p.a. payable during the first semester of every year.

— Continuing Students

— New Students

INDIAN INSTITUTE OF TECHNOLOGY BHILAI

Sl.	Description – For All Students	Amount in Rs.
A) One-time fees:		
1	Admission Fee	500
2	ID Card and Certificates Fee	1,000
3	Library Fee	500
4	Celebrations Fee	1,000
5	Training & Placement Fee	1,000
6	Alumni Life Membership Fee	3,000
Total (A)		7,000
B) One-time REFUNDABLE DEPOSITS:		
7	Caution Money Deposit	7,000
Total (B)		7,000

				M Semester	W Semester	S Semester
C) Fee						
8	Academic Registration Fee			500	500	500
9		1,00,000	1,00,000	25,000		
D) Student Welfare Fund						
13	Student Welfare Fund			1,000	1,000	-
E) Hostel Fee				M Semester	W Semester	S Semester
14	Hostel Admission Fee			500	500	-
**	Dining Fee & Insurance Premium are subject to revision.					

Fee payable through State Bank Collect (available at
<https://www.onlinesbi.com/sbicollect/icollecthome.htm>)

All new students are required to pay the total fee comprising of 5 components, namely, A to E and Insurance premium. All continuing students are required to pay the total fee comprising of 3 components, namely C to E and insurance premium.

		Total BTech Fee (in Rs.):		M Semester	W Semester	S Semester
		Student Type (↓) / Semester (→)				
1,46,95 0	0	1,45,950	46,225			
1,60,95 0			NA			

Note:

- (a) Declaration of pre-existing ailments is compulsory.
- (b) SC/ST/PH students shall get complete waiver in Tuition Fee.
- (c) Most Economically backward students whose family income is less than 1 lakh per annum shall get complete waiver in Tuition Fee.
- (d) Other Economically backward students whose family income is between 1 lakh to 5 lakhs per annum shall get a remission of 2/3rd of the Tuition Fee.

Sd/-

Assistant Registrar (Students' Affairs)

Academic Structure

IIT Bhilai offers 4-year BTech programs in the six engineering disciplines: Computer Science and Engineering, Data Science and Artificial Intelligence, Electrical Engineering, Mechanical Engineering, Materials Science and Metallurgical Engineering, Mechatronics Engineering.

The BTech program (normally) runs for four consecutive academic years, where each academic year consists of two regular semesters – termed as the Monsoon and the Winter semesters – and a Summer semester. The Monsoon semester begins around the last week of July, and ends in the last week of November. The Winter semester starts around the last week of December and ends in the first week of May. In between the Monsoon and Winter semesters, the institute also

runs a Summer semester that normally starts in the second week of May and ends in the first week of July.

Before a semester begins, every student is required to register for the relevant courses based on the requirements of the program he/she is enrolled in. Institute may offer regular courses in the Summer semester, and the BTech students interested in taking such courses may register for the Summer semester.

For more details about the IIT Bhilai academic structure, please visit:

www.iitbihilai.ac.in/index.php?pid=nav_academic

Computer Science and Engineering

The 4-year BTech program offered in the discipline of CSE addresses all kinds of theoretical and practical aspects of computing. They include, among others, design, analysis and various applications of algorithms, data structures, theory of automata, formal languages and computation. The engineering aspects of computing include various topics in systems such as computer architectures, programming languages, compilers design, operating systems, databases, computer networks and software engineering. The program includes a number of advanced elective courses in each of the above topics, as well as in areas such as machine learning, computer vision, big-data analytics, information security, wireless networks and mobile computing. The program also has a provision to credit courses from science, humanities and other engineering disciplines.

Gender-based and/or handicap (physical/ neurological)-based restrictions: None

Data Science and Artificial Intelligence

The institute offers 4-year BTech program in the discipline of DSAI from 2020-21 academic session. The curriculum for the program is designed to provide adequate balance of fundamental/foundation, core, and elective courses. The fundamental courses will be focused on two broad areas that are prerequisite for the core courses related to Data Science viz. mathematical foundation like, Linear Algebra, Probability and Statistics, Optimization etc. and computer science and engineering like, Data Structure and Algorithms, Computer Networks, Cyber Security, etc. The core courses related to data science will involve subjects like Data Analytics and Visualization, Artificial Intelligence, Machine learning, Management of Large Data etc. The bucket of electives would comprise focused and state of art courses like Natural language processing, Deep learning, Image processing and analytics, Social Engineering Analytics etc.

Gender based and/or handicap (physical/neurological)-based restrictions: None

Electrical Engineering

The institute offers 4-year BTech program in the discipline of EE. The 8-semester curriculum comprises core courses, department elective courses, open electives, seminars, experiments in laboratory, projects, and humanities courses. The program offers flexibility so that the students can undertake various elective courses that expose them to diverse disciplines of EE such as Communications and Signal Processing, Microelectronics and VLSI design, Power Electronics and Power System, Control Systems and Embedded Systems. The undergraduate students also have the opportunity to do research work through BTech projects.

Gender based and/or handicap (physical/neurological)-based restrictions: None

Mechanical Engineering

The institute offers 4-year BTech program in the discipline of ME. The 8-semester curriculum comprises of classical subjects such as Mechanics, Dynamics, Thermodynamics, Fluid Mechanics, Solid Mechanics and Strength of Materials. The discipline further diversifies into various other areas such as design, analysis and manufacturing of automobiles, aircraft, locomotives, ships, power-plants, and also inter-disciplinary areas like energy and environment, earth and planetary sciences, nuclear fission and fusion, solar, wind and other alternate energies.

Gender based and/or handicap (physical/neurological)-based restrictions: None

Materials Science and Metallurgical Engineering

The institute offers 4-year BTech program in the discipline of MSME. The curriculum of this program has been developed in view of the current technological status and future demands. This program provide a solid foundation while covering topics like steel and alloy making as well as advanced materials like electronic, smart, ceramic, energy, materials, and polymers. This department also offers a platform for extensive research activity spanning various research areas with high-caliber faculty members who worked/graduated from world-class institutes. These inter-departmental faculty members have interdisciplinary research with international exposure establishing state-of-art technologies in metallurgical engineering, materials science, polymers, robotics, micro-/nanorobots, etc. With solid collaborations with SAIL-BSP, the students will be exposed to the latest industrial technologies and processes.

Gender based and/or handicap (physical/neurological)-based restrictions: None

Mechatronics Engineering

The institute offers 4-year BTech program in the discipline of Mechatronics Engineering. Principles of mechatronics are going to play a major role in Industry 4.0 which is considered as the fourth industrial revolution. As the relevant technologies (like artificial intelligence, virtual reality, and internet of things) are advancing it is becoming more compelling for industries to adopt them move towards Industry 4.0 and become smart industries. To realize it, people with relevant interdisciplinary skills are required. Mechatronics engineering is thus an impressive career choice and an evolving field in the current scenario. Mechatronics engineers are expected to play a major role in the domain of autonomous vehicles, factory automation, transportation, logistics, aviation, etc. The curriculum of this program has been developed considering above facts.

Gender based and/or handicap (physical/neurological)-based restrictions: None

Rules For Change Branch

BTech students are eligible for a change of discipline. Discipline change guideline are as follows:

1. The discipline change option is given to the applicants purely based on the Cumulative Grade Point Average (CGPA) at the end of the second semester.
2. In case there is a tie, the grade distribution will be used to break the tie.

3. Discipline change takes place on a condition that the enrolled capacity of any discipline shall not reduce more than 20% and the total number of students of any discipline shall not exceed 110% of the allotted capacity.

Once the discipline change is made, no further change is possible.

Faculty

At present, IIT Bhilai, on its roster, has more than 60 faculty members, working in various cutting-edge research areas spread over arts, engineering, mathematical and scientific disciplines. All the faculty members have exposure to world-class education and research as doctoral students and postdoctoral researcher – in various top-ranking laboratories and institutes in India and abroad.

The present faculty members of IIT Bhilai are engaged in the following research areas:

- _ Chemistry: Organic Chemistry, Polymer Chemistry, Bio-inspired Macromolecules, Functional Materials, Inorganic and Organometallic Chemistry, Homogeneous Catalysis, Halide perovskites, Photoelectro chemistry, Photocatalysis.
- _ Computer Science and Engineering: Hardware & System security, IoT, ERP Systems, Business Process Re-engineering, Big Data and machine learning, Cognitive Computing, Recommendation Algorithms, Data Mining, Embedded computing, VLSI design, Operating Systems, Cryptography, Theoretical and Side-Channel Cryptanalysis, Cryptographic protocols & Blockchains, Algorithms, Social & Complex Network Analysis, Mathematical Formulation, Combinatorial Optimization, Graph Theory, Vehicle Routing Problems, Approximation Algorithms.
- _ Electrical Engineering: Computer networks, Queueing systems, Wireless communications, Stochastic geometry, Wireless networks, Solar Cells, Plasmonics, Flexible electronics.
- _ Liberal Arts: Cultural studies, sports studies, Development economics, political economics, positive organizational behaviour, positive psychology, Macroeconomic, innovation, Financial economics, Urban studies, Victorian studies, and World Literature.
- _ Mathematics: Nonlinear Functional Analysis, Variational Inequality Problems, Fixed Point Theory and Applications, Optimization Theory, Equilibrium Problems.
- _ Mechanical Engineering: Solid Mechanics (Computational mechanics, Experimental Mechanics, Damage and Fracture Mechanics) Fluid Mechanics (Low Reynolds number flow, Microfluidics, Rarefied gas flow) Heat Transfer (Conjugate heat transfer, Cogeneration) Manufacturing (Metal cutting, non-conventional machining, metal forming, Advanced PVD coating for cutting tools, Modelling and simulation of manufacturing processes, Additive manufacturing, Micromachining, Surface treatment, Surface texturing, Materials Characterisation, Thin film tribology), IC Engines, Alternative Fuels, Advanced materials processing and Structure-Property Correlation.
- _ Physics: Thin Films and Technology, Solar Energy Materials, High Energy Physics, Astroparticle Physics, Neutrino Physics, New Physics at Large Hadron Collider, Quark Gluon Plasma, Quantum Field Theory at Finite Temperature, Hadronic Physics, Photonics, Nonlinear Optics, Optical Parametric Oscillators in all Time Scale, Nonlinear Frequency Conversion Sources, Frequency Comb Generation.

Facilities

_ IIT Bhilai has modern, safe and secure designed accommodation. IIT Bhilai on-campus residences make the students settling in a breeze. Hostels in IIT Bhilai are like a home-away from-home. IIT Bhilai ensure that the inmates are comfortable and are provided with a congenial

environment to pursue their studies. The hostel rooms are well ventilated and adequately furnished. Each student is provided a separate bed, a study table, chair and an almirah. The entire hostel premises are Wi-Fi enabled with 24x7 internet facility. Residential facilities at IIT Bhilai can accommodate about 960 male and 380 female students as full-time residents.

Student Life at Institute

Students are provided with all the basic infrastructural facilities, such as a library, computing labs, workshops, and a number of core engineering laboratories. IIT Bhilai is a residential campus equipped with recreation-cum-TV rooms, regular dining facilities, night canteens, etc. Wi-Fi access is available throughout the campus. The institute has a couple of well-maintained sports grounds and a multi-gym. Students can take part in numerous sports activities – indoor and outdoor – as a recreational exercise, as well as to maintain physical fitness. Council of Student Affairs (CoSA) is the student body, which actively conducts and manages student related activities of IIT Bhilai. IIT Bhilai has a rich legacy of Techno cultural events. Meraz is the Annual Techno-Cultural fest of IIT Bhilai which is organized by CoSA body. The fest provides a platform for students to tap their potential and unravel their quiescent talents. For further information, click here: https://www.iitbihilai.ac.in/index.php?pid=pro_student.

Financial Assistance

IIT Bhilai provides tuition fee waiver for socially and economically backward students. IIT Bhilai also provides scholarships, fellowships, awards, and interest free education loan to deserving students.

Financial Assistance/Awards:

At IIT Bhilai, financial assistance are given to its students to support their education.

Institute scholarships/fellowship provide crucial financial support to students, enabling them to focus on their studies and pursue their educational goals without the burden of financial constraints. Donor based scholarships are scholarships that are awarded to its students by individuals, organizations, or businesses who donate funds to support their education. Donor awards are sponsored by individuals who wish to encourage the young students of IIT Bhilai to achieve academic brilliance.

Following table depicts the Institute Scholarships/Fellowships, Donor based scholarship, and donor awards.

Institute scholarships/fellowship	Donar Based Scholarship	Donor Awards
1.Merit-Cum-Means Scholarship	GSTN-CSR Scholarship for MSc students	1. P. K Jain Memorial Award 2. Geet Amal Ghosh-Roy Award
2.Institute Free Studentship Scholarship		3. R. P. Singh Memorial Award for Leadership and Social Work
3.Institute SC/ST Scholarship		4. Gayatri Devi Leadership Award
4.Institute Fellowship to Postgraduate Students		5. Alumni Association's Young Researcher Award 6. K. P. Jain Higher Education Award

Training & Placement

The Centre for Career Planning and Services (CCPS) aims to provide placement and internship opportunities and relevant training for students along with guidance for their career progression.

Placements

This year's graduating class witnessed outstanding placements, with notable organisations participating in the campus placement process. To mention a few, students received offers from Amazon, Accenture Japan, Arista Networks, AirAsia, Bosch Limited, Increff, ICICI Bank, Deutsche Bank, Paytm, Deloitte, TCS, Infosys, Radisys, Daimler, Reliance Jio and L&T Group. Over 105 firms from IT, analytics, management, training and research, finance and consulting, and core technical sectors participated. A total of 131 offers were bagged by the students in the current placement session, inclusive of 9 Pre-Placement-Offers (PPO).

Key highlights

- The highest and average CTC was 48.64 and 14.47 Lakhs per annum respectively.
- Over 85% BTech students got placed.
- MTech-CSE, EE and DSAI students got 100% placement record, MTech DSAI batch being the pioneering batch this year. MTech-CSE continued its 100% placements record this year as well. Close to 95% placements for PG students this year.
- This placement session witnessed our first International recruiter, Accenture Japan which marks the entry of IIT Bhilai in the international corporate arena as well which made offers to 3 of our students.
- There is 4.8% increase in the number of offers compared to the last placement session.
- There is a hike of 77.32% in the Highest CTC this year as compared to the previous placement session.
- 24.17% increase in the number of PG Placements, 12% increase in the average CTC for UG students.
- PSUs like UIDAI, CDOT, and C-DAC participated in the campus placements this year.

Campus Placements 2022-2023 Statistics

Internships

For Internships and training programs, IIT Bhilai has partnered with major corporate offices and institutes. During the academic year 2022-2023, CCPS Office collaborated with numerous industrial facilities, corporate houses, institutions, and other organisations not only to provide internship opportunities to the students but also provide practical and industrial exposure.

Industry And Alumni Relations

IIT Bhilai Alumni Association was registered with Registrar Firms and Societies, Chhattisgarh, on 8th October 2020 with the goal of creating a fraternity and maintaining a relationship between alumni and their alma mater. The alumni association has 443 registered members already, with the fourth cohort of students graduating in May 2023. IIT Bhilai Alumni Association has also registered with the income tax department U/S 12A (vide Registration No. AABA19460LE20218 dated 11th February 2022) and U/S 80G (vide Registration No. AABA19460LF20224 dated 31st December 2021) whereby donations made to the Association are eligible for exemptions under the Income Tax Act. At IIT Bhilai, Student Alumni Cell (SAC) was formed with the sole aim of managing and enhancing the communication between the “dreamers” and “achievers”. SAC has started Leaders Lounge, Alumni Masterclass, Alumni Career Guidance Program (Mentorship Program) for communicating between the “dreamers” and “achievers”.

Recreational/Extra Curricular activities

In the short duration, IIT Bhilai has developed a distinctive culture of extracurricular activities. The Annual Techno-cultural fest of IIT Bhilai “MERAZ” is organized every year nominally in the month of October. It comprises various events, like workshop competitions and exhibitions.

The sports council of IIT Bhilai organizes an intra-IIT sports league “Prayatna” every year. Students form different teams, and the team members play against one another over eight different sports. This event runs for almost three to four months, creating a healthy and competitive environment in the campus.

Apart from these events, various clubs keep organizing extracurricular activities all around the year. Some of the popular events among students are Robo Carnival, Cultural night, Theater night, and Parliamentary Debate.

Location and Accessibility

Location of temporary campus:

Raipur is a capital city of Chhattisgarh, well connected by Air, Train line and Roads.

§ Airport: Temporary campus is located about 16 km from the Raipur Mana airport.

§ Train: It is about 13 km from the Raipur junction railway station.

§ Bus: It is about 12 km from Pandri main Bus Terminal, Raipur.

IIT Bhilai

3 languages

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Tools

From Wikipedia, the free encyclopedia



Other name IIT-BH

Type Public technical university

Established 2016 (8 years ago)

Chairman Krishnamurthi
Venkataramanan

Director Prof. Rajiv Prakash

Undergraduates 450^[1]

Address Kutelabhatta village, Bhilai,
Chhattisgarh

Campus Urban,Eco Friendly
Campus, 445 acres

Website www.iitbhilai.ac.in



History and Establishment

Indian Institute of Technology Bhilai was inaugurated on 7 August 2016 by Shri Prakash Javedakar, Hon'ble Minister for Human Resource Development, Government of India, and Shri Raman Singh, Hon'ble Chief Minister, Government of Chhattisgarh. [IIT Hyderabad](#) was entrusted with the responsibility of mentoring the institute under the guidance of Prof U.B. Desai, Director, IIT Hyderabad. The institute started its operation from its transit campus located in the Government Engineering College (GEC) at Sejbarahar, Raipur, wherein the first batch of students was inducted in 2016. Prof Rajat Moona took charge as Director of IIT Bhilai on 20 March 2017. Prior to joining IIT Bhilai, he was Director General of the Centre for Development of Advanced Computing (C-DAC), Government of India. He is affiliated to the Department of Computer Science and Engineering at [IIT Kanpur](#). Prof Rajiv Prakash took charge as Director, IIT Bhilai on 26 September 2022. A professor of Materials Science and Technology at [IIT \(BHU\) Varanasi](#), Prof Prakash is one of India's foremost scientists in the fields of electronic polymers and nanocomposites, organic electronics, sensors, and energy storage devices. IIT Bhilai shifted to its permanent campus on 1 August 2023 and the BTech new session took off from the permanent campus.

Campus

The permanent campus of IIT Bhilai is a complete self-sustaining residential campus and it will be developed subsequently in phased manner. Over the course of 20 years, the campus is anticipated to expand to house 12,000 students. The present phase of the permanent campus of IIT Bhilai is being constructed in Kutelabhata village, Bhilai, District Durg and will cater to 1200 students respective faculty and staff members.

- Airport: The Raipur Airport in Mana is about 54 km away from the permanent campus.
- Train: The Durg railway station is about 5.4 km from the permanent campus.Organisation and administration

The academic departments in IIT Bhilai include:^[2]

- Electrical Engineering and Computer Science (includes CSE, EE & DSAI)
- Mechanical Engineering
- Physics
- Chemistry
- Mathematics
- Liberal Arts
- Mechatronics

Academics

[edit]

Academic Programs

[edit]



Construction undergoing for IITBH permanent campus [3]

IIT Bhilai offers Bachelor of Technology (BTech), Master of Technology (MTech), Master of Science (MSc) and Doctoral programs (PhD) in various departments.

The Institute made its modest start with introduction of BTech program from August 2016. IIT Bhilai currently offers six undergraduate programs in the disciplines of Computer Science and Engineering (CSE), Data Science and Artificial Intelligence (DSAI), Electrical Engineering (EE), Mechanical Engineering (ME), Materials Science and Metallurgical Engineering (MSME) and Mechatronics Engineering (MT).

The institute also offers MTech programs in the discipline of Bioengineering, Electric Vehicle Technology (EVT), Computer Science and Engineering (CSE), Data Science and Artificial Intelligence (DSAI), Power Systems and Power Electronics (PSPE), Control and Instrumentation (CI), Electronics and Communication Engineering (ECE), Materials Science and Metallurgical Engineering (MSME), Design and Manufacturing (DM), Thermal and Fluids Engineering (TFE) and Mechatronics Engineering (MT) as well as MSc programs in Chemistry (CY), Mathematics and Computing (MA), and Physics (PH).

Further, the institute offers PhD programs in Bioscience and Biomedical Engineering (BSBME), Electronics and Communication Engineering (ECE), Materials Science and Metallurgical Engineering (MSME), Chemistry (CY), Computer Science and Engineering (CSE), Data Science and Artificial Intelligence (DSAI), Electrical Engineering (EE), Electric Vehicle Technology (EVT), Liberal Arts (LA), Mathematics (MA), Mechanical Engineering (ME), Mechatronics Engineering (MT), and Physics (PH).

Rankings[edit]

University rankings

Engineering – India

NIRF (2023)^[4]

81

IIT Bhilai is ranked 81 among the engineering colleges of India by National Institutional Ranking Framework (NIRF) in 2023.^[4]

Facilities[edit]

The academic building houses the central library, various laboratories and workshops which are equipped with state-of-the-art apparatus.^[5]



Chemistry Lab at IIT Bhilai

Laboratories[edit]

There are four laboratories – Computer Centre, Electrical Lab, Physics lab and a Chemistry lab.

The institute has two computer laboratories. The labs have a total of 64 Dell OptiPlex 9020 MT Desktops with 4 GB RAM and 500 GB hard disks, and six Dell PowerEdge R 630 servers.^[6]

Chemistry lab apparatus includes a vortex mixer, rotary evaporator, UV ozone cleaner and so on.^[5] The lab also supports fume extractors which restore the air purity and hence limit the exposure to hazardous or toxic fumes, vapors or dust.^[5]

Workshops^[edit]



The Digital Fabrication Lab at IIT Bhilai

Workshops have been set up in the main building which support prototyping and building of various projects undertaken by both undergraduate as well as post-graduate students. The workshops play an integral role in the curriculum by providing hands-on training to the students. These workshops have served as incubation centers for the first automobile car developed by the students of the mechanical engineering department.

- Digital Fabrication Lab: Equipped with [3D printers](#) and [3D scanners](#), the Digital fabrication lab caters to the needs of rapid prototyping of plastic parts for various projects. The students learn the basics of designing in the freshman year by courtesy of a course on 3D printing which introduces [CAD](#) modelling and gradually builds up to having the students make their own 3D printed projects.
- Do It Yourself (DIY) Lab: The lab provides hands on training of various manufacturing processes. Prioritizing the safety of the students, the training is carried out using table-top machinery and cold-casting in lieu of the traditional methods. The students are introduced to various machinery including [Laser cutters](#), [CNCs](#) and [Lathes](#).

Partnerships and collaborations^[edit]

- Bhilai Steel Plant (BSP) has signed a MoU with IIT Bhilai for Industry Academic Collaboration. As part of the MoU that IIT Bhilai signed with Bhilai Steel Plant, IIT Bhilai will provide its services through its faculty and staff members in the areas of joint research & development activities, including those related to innovation & creativity, joint exploration in areas of steel-making, manufacturing, fabrication processes, information technology, etc. to troubleshoot technical problems in various production processes of Bhilai Steel Plant. BSP shall provide internship and project-work opportunities to [B.Tech.](#) and [M.Tech.](#) students and research scholars from IIT Bhilai.^[7]
- MoU signed between IIT Bhilai and Chhattisgarh Biofuel Development Authority (CBDA) for Academic and Research Cooperation in Biofuels & Bioenergy, on 20 May 2019 ^{[8][9]}
- MoU signed between IIT Bhilai and [CDAC Pune](#) to collaborate on technological development and deployment in the areas of mutual interest, on 14 April 2019 ^{[10][9]}
- MoU signed between IIT Bhilai and 36Inc - Startup Chhattisgarh for Academic and Research Cooperation on 5 January 2019 ^[9]
- In 2018 the institute's Innovation Council (IIC) was established under the MHRD's Innovation Cell (MIC) scheme. The IIC of IIT Bhilai was recognized by MIC on 21 November 2018
- MoU signed between IIT Bhilai and Vara Technologies for imparting skills on Cyber Security and Internet of Things (IoT), on 11 October 2018 ^[11]
- MoU signed between IIT Bhilai and [Infineon Technologies](#) for joint promotion of Infineon's security solutions, on 27 September 2018 ^{[12][11]}
- MoU signed between IIT Bhilai and Centre for Materials for Electronics Technology (C-MET) for Academic and Research Cooperation on 23 July 2018 ^[11]
- MoU signed between IIT Bhilai and CSIR-National Chemical Laboratory, Pune, India for Academic and Research Cooperation on 7 June 2018 ^[11]
- MoU was signed between IIT Bhilai and [National Chin-Yi University of Technology, Taiwan](#) to partner student/faculty exchange and to foster R&D projects on 2 May 2018 ^[13]
- IIT Bhilai had signed an MoU with [Central Public Works Department, Government of India](#) for construction of various components of building and allied service in the permanent campus on 14 March 2018
- MoU signed between IIT Bhilai and [IIT Kanpur](#) for sharing of Web-based software on 21 April 2017

Student life[edit]

This section needs additional citations for verification.

Please help improve this article by adding citations to reliable sources in this section.

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Apart from the academics, the student life at IIT Bhilai various includes extra-curricular activities which are held by various student clubs.^[14] From hackathons to cultural events, all are managed by student bodies. In support of various social causes, the students also volunteer for different activities under the [National Service Scheme](#).^[15] Regular drives of [Swachh Bharat Mission](#) are carried out within the campus as well as around it. The students are also involved in teaching drives which cover the neighboring schools in the villages.^[15]



A dance performance during MERAZ 2018

Council of Student Affairs (CoSA)[edit]

The Council of Student Affairs (CoSA) was established in 2018. The CoSA is an extension of the student gymkhana system - which was in place during the academic year 2017–18. The

CoSA is a canopy for two parallel bodies – The Student Gymkhana (responsible for managing cultural, technical, sports and outreach activities) and the Students' Senate (manages academic concerns). The bodies consist of elected student representatives from both UG and PG levels and are guided by the faculty members. The President heads the CoSA. The Student Gymkhana and the Students' Senate further consists of elected students representing various spheres of concern such as cultural (music, dance, art, drama), sports, academics and so on. In 2018, the elections to the above posts were carried out using [Electronic Voting Machines \(EVMs\)](#) and a cent percent voting attendance was recorded.^[14]

MERAZ (Techno-Cultural Fest)[\[edit\]](#)

Within a couple of years since its inception, IIT Bhilai conducted its first major annual technical and cultural festival – Meraz.^[16] The fest was held in October 2018 over a span of 3 days and featured events and performances by various professionals from both – the Technical and as well as the Entertainment industry. With an attendance of over a thousand students from all across the state, Meraz brought in a huge influx of technical as well as cultural diversity.^[16]

IIT Bhilai Motorsports[\[edit\]](#)



The IIT Bhilai Motorsports team in Enduro Student India 2019

IIT Bhilai Motorsports is a student team as a part of Motorsports Club from Indian Institute of Technology Bhilai. The Club being established in 2017, consists of 60+ members targeting to design and fabricate [ATV](#) to compete in national level all terrain vehicle events.

IIT Bhilai Motorsports made its debut at Enduro Student India (ESI) 2019, being the only 3rd gen IIT to participate in this competition. The team successfully cleared technical inspections

based on design, engine check and brake check test in static events. In dynamics, the team actively participated in all the events - DirtX, Sprint, Acceleration & Maneuverability as well as Endurance race.

A team of 17 members represented IIT Bhilai Motorsports at Pune in the competition along with more than 70 other teams.

Sports

[edit]

Apart from the technical laboratories, the transit campus also offers the students an opportunity to practice various sports. Floodlight enabled football ground, volleyball court, basketball court and indoor badminton courts serve as the focal point of sports development in IIT Bhilai.

- Prayatna is a multi-sport, intra-institute event held annually during the winter semester. It was started in 2018 with the motive of encouraging sports as an integral part of one's holistic development. Prayatna spans over two and a half months featuring 5 to 6 teams competing in various indoor and outdoor games.
- Inter-IIT Sports Meet: IIT Bhilai has been an active participant in the prestigious Inter-IIT games, sending its contingent from the first year itself to the [Inter-IIT Sports Meet](#) 2016. In 2017 the institute grabbed its first major trophy by winning the Inter-IIT Impact League.

Covid-19 innovations

[edit]

This section is in
[list format](#) but
may read better as
[prose](#). You can
help by [converting](#)
[this section](#), if
appropriate. [Editing](#)
[help](#) is available.
(February 2024)

- Chemistry Department has developed hand sanitizers, to use across the campus.
- Mechanical Engineering Department has developed novel technologies to help medical doctors and health care personnel like a full face mask, which is not only to protect the mouth and the nose, but also covers the eyes and ears. Reusability is the biggest advantage of the mask and it can be prepared for reuse within 30 minutes. Two [N95](#) compatible filters are attached to this mask for sufficient air circulation. There is an additional feature for attaching hazmat clothing to the mask, which enhances its protection levels while putting on and removing the mask.

- A first generation nasal test swab has been fabricated in-house using biocompatible material. A nanoparticle-based anti-viral/anti-microbial coating on clothing has been developed.
- The institute has worked on building a PAN IIT alumni network for defining COVID-19 test plans.
- A contactless water dispenser has been designed by the Electrical Engineering Lab. It is an IR sensor based device, designed for indoor applications like a water dispenser for washing hands or drinking water kiosk.^[17]
- During these testing times IIT Bhilai has come forward and is providing its ambulance services in collaboration with Sumit Foundation, Raipur for needy patients.^[18]

Indian Institute of Technology (ISM) Dhanbad

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	Indian Institute of Technology (Indian School of Mines),Dhanbad 826004, Jharkhand, India
Contact Person For Admission:	Prof. Pramod Kumar Kewat
Designation:	Chairman, JEE (Advanced)
Email:	chair.jeea@iitism.ac.in
Alternate Email:	jeea@iitism.ac.in
Phone Nos:	0326-2235292
Fax No:	0326-2296563
Mobile No.:	0326-2235292

About the Institute

Standing tall since the early decades of the 20th century, the Institute is steadily sailing through the millennium change and has emerged into one of the most prominent institutions - Indian Institute of Technology (Indian School of Mines) with full bloom functioning of 18 branches of Engineering, Applied Sciences, Management Studies, and Humanities. IIT (ISM) has long centenary credentials of outperforming achievements/contributions in academia and the industry.

The Indian National Congress at its XVII Session of December 1901 passed a resolution stating that *“in view of the fact that the tendency of recent legislation, namely, The Indian Mines Act VII of 1901, is that all Indian mines must be kept under the supervision of mining experts, the Congress is of the opinion that a Government College of Mining Engineering should be established in some suitable place in India on the models of the Royal School of Mines in England, Mining Colleges of Japan and at other places in the continent”*. The McPherson Committee formed by Govt. of India recommended the establishment of an institution for imparting education in the fields of Mining and Geology, whose report, submitted in 1920, formed the main basis for the establishment of the Indian School of Mines, Dhanbad.

The Indian School of Mines was formally opened on 9th December 1926 by Lord Irwin, the then Viceroy of India, to address the need for trained manpower related to mining activities in the country with disciplines of Mining and Applied Geology. In 1967 it was granted the status of a deemed-to-be university under Section 3 of the UGC Act, 1956. Since its establishment, IIT (ISM) has undergone

considerable expansion of its activities, and presently it can be considered a total technology education institute.

Situated in the heart of the country's prime coking coal belt, 260 kms from Kolkata, with a campus spread over an area of 393 acres (with 218 acres of existing campus and 175 acres under acquisition and development), the fully residential IIT (ISM) has all the facilities of world-class academic Institute. What started as an institution to impart mining education has graduated into a full-fledged technical institution of international acclaim, offering a host of programs like B. Tech., M. Tech., M. Sc. Tech., MBA, and Ph.D.

IIT (ISM) is striving relentlessly to become and remain a nationally and internationally acclaimed premier institution of higher technical and scientific education with social commitment having an ethos for intellectual excellence, where initiative is nurtured, where new ideas, research, and scholarship flourish, where intellectual honesty is the norm and from which will emerge the leaders and innovators of tomorrow in the realm of technology. While catalyzing a developing society, its goal as one of the premier technical education institutions in the country would be to intimately involve itself not just in the nation's technological development but indeed in its overall development.

For more information, please visit: https://www.iitism.ac.in/about_overview

Fee Structure

[A] Total amount [*in Indian Rupee (INR)*] to be paid at the time of admission:

Category	Indian Nationals		Foreign Nationals#	
	GEN / GEN-EWS / OBC-NCL	SC / ST / PWD		
Tuition Fees	100000	NIL	300000	
Other Fees*	31850	31850	31850	
Total	131850	31850	331850	

Fees for OCI/PIO Card holders are as per GEN / OPEN category of Indian National.

*For a detailed break-up of *other fees*, you may visit:

https://people.iitism.ac.in/~download/admission/jeea/Fees_to_be_Paid-indian.pdf

https://people.iitism.ac.in/~download/admission/jeea/Fees_to_be_Paid-FOREIGN.pdf

#Foreign national students desirous of availing of elevated accommodation and dining facility at the Institute's International Hostel need to pay an extra INR 47261/- per semester over and above the prescribed fees in [A]. For availing International hostel, the students are required to put forward their request, which may be considered on a case-to-case basis, depending upon the availability and as per the Institute norms. Break up of extra charges: INR 25600/- (Mess charge, which may change depending upon the price of food items in the future) and INR 21661/- (Hostel Seat Rent).

[B] Total amount [*in Indian Rupee (INR)*] to be paid at the time of admission for Indian National students from low family income (GEN / GEN-EWS / OBC–NCL only)**

Category	Applicable only for Indian Nationals	
	Below 1.00 lakh	Above 1.00 lakh but below 5.00 lakhs
Tuition Fees	NIL	33333
Other Fees	31850	31850
Total	31850	65183

**For tuition fee concession/waiver (Only for GEN / GEN-EWS / OBC–NCL), the candidate must submit all the necessary documents for verification at the time of admission.

Note: The mess fee of INR 18000/- is not included in the above, payable amount, and it will be added at the time of admission.

Academic Structure

Departments: There are 17 Departments in the Institute. Details of each Department – Academic programs, Research activities, Laboratory facilities, and Faculty members - can be obtained from the link below:

<https://www.iitism.ac.in/departments>

Academic Programmes: The Indian Institute of Technology (Indian School of Mines), Dhanbad, constituted under the Institute of Technology Act, 1961, is administered through the IIT Council-the apex body, Government of India, under the Chairmanship of Honourable Minister, MoE for uniform and smooth governance of Pan-IIT in our country.

The Institute offers 12 nos. of 4-year B.Tech. courses in different disciplines of Chemical Engineering, Civil Engineering, Computer Science, Electrical Engineering, Electronics and Communication Engineering, Engineering Physics, Environmental Science and Engineering, Mechanical Engineering, Mineral Engineering, Mining Engineering, Mining Machinery

Engineering, and Petroleum Engineering. It also offers a 5-year integrated M.Tech. in Applied Geology, Applied Geophysics, and Mathematics & Computing. Admission to these courses is made by Joint Entrance Examination (Advanced) – JEE (Advanced) at the All India level.

The Institute offers 14 M.Tech. courses in various streams offered by different Departments/centers. Admissions to all these 2-year M.Tech. courses are carried out through GATE conducted at the All India level. The Institute also offers a 3-year M.Sc. Tech. courses in Applied Geology and Applied Geophysics, 2-year M.Sc. courses in Physics, Chemistry, and Mathematics & Computing. Admissions to these courses are based on JAM (Joint Admission Test for M.Sc.) score held at the All India Level. The 2-year MBA Programme is also offered, where admission is based on combined scores of CAT and personal interview/group discussion of candidates.

The Institute offers research opportunities available in different disciplines of 17 Departments. Admission to Ph.D. is made through GATE/NET/JRF. The Post-Doctoral Fellowships (PDFs) and Quality Improvement Programme (QIP) opportunities are also available at the Institute.

For more information, please visit: <https://www.iitism.ac.in/~academics/>

Research and Development : The Office of the Dean (Research and Development) drives strategic planning and provide guidance across academic and research programs, fostering new and interdisciplinary research initiatives and collaborations. For more information, please visit:
<https://people.iitism.ac.in/~research/>

In addition, we have a central research facility (CRF) that is equipped with state-of-the-art high-end research instruments. Details are available here:

<https://people.iitism.ac.in/~research/crf/index.php>

Faculty Members: Details of Faculty Members may be obtained directly from the following link:

https://www.iitism.ac.in/current_faculty

Rules For Change Branch

Details of Branch Change rules and reservation policy may be obtained from the following link:

https://admission.iitism.ac.in/index.php/admission/jeeadvance/add_jeeadvance/change_branch

Faculty

Details of Faculty Members may be obtained from the following link:

<https://www.iitism.ac.in/index.php/faculty>

Facilities

Laboratories : Details of Laboratory facilities available in different Departments can be obtained from the link:

<https://www.iitism.ac.in/departments>

Computing and Internet Facility : IIT (ISM) has a state-of-the-art Computer Centre which supports a campus-wide Fibre Optic Network comprising 7000 nodes that connect all the academic Departments, central library, administrative Departments, each room of hostels, residences of faculties, and officers. Internet access is provided to all the users through dedicated internet links and is being augmented further. Computer Centre has a number of state-of-the-art servers, LINUX and WINDOWS Labs, and application software. Campus-wide 4G Wi-Fi network for all valid users of the campus is being created.

Central Library : The Central Library of the IIT(ISM) is the heart of the Institute, providing direct academic and research supports to all departments. The Central Library is an automated library in terms of records organization and management of all its different sections, search and discovery, information retrieval, and service delivery. The whole library operations run on LIBSYS-integrated library management software.

Over the years, the library has developed several databases of books, journals, theses/dissertations, conference proceedings, etc. All documents have been bar-coded. Focus has been given to the collection build-up of print resources, licensed e-resources, plus E-Shodh Sindhu-sponsored resources. The library has reached all the departments, hostels, and quarters on the campus-wide LAN.

The library has initiated the development of the “Institutional Digital Repository” based on the DSpace open-source platform. The Central Library has set up its “Research Documentation Cell” based on the research outputs indexed in Scopus and Web of Science.

To meet the challenges of the increasing number of students, research scholars, faculty members, and ever-changing information and communication technologies, a G+7 centrally air-conditioned library with state-of-the-art facilities is now operational to provide top-quality library services.

For more information, please visit: <https://library.iitism.ac.in/>

Medical Facility : Medical facilities available at the Health Centre of the Institute are provided to all students during their study period at IIT (ISM). The Health Centre is well-staffed and equipped with facilities for the treatment of outdoor patients. In emergency doctors are available 24/7. The services of specialist visiting doctors are also available on a regular basis. Besides, important renowned hospitals in the country have been tied up to providing medical assistance and treatment in emergencies. The Institute boasts of its state-of-the-art health facilities available, in addition to a 24×7 ambulance service and campus security.

For more details, please visit here: <https://www.iitism.ac.in/~healthcenter>

Student Life at Institute

The campus life at IIT (ISM) never comes to a halt. With over 7000 students from around the country and dozens of variegated fests around the year, one shall invariably have something

or the other to experience or look forward to. Hop to discover how enterprising life at IIT (ISM) Dhanbad can be.

For more details on campus life, please visit: <https://www.iitism.ac.in/~dsw/>

For a campus tour, please visit:

<https://people.iitism.ac.in/~download/video/iitism-campus-tour.mp4>

Financial Assistance

Education must never succumb to mere finances. A big portion of IIT (ISM) students avail scholarships of one kind or the other, provided by the government or by the Institute's Alumni Associations so that no student misses off a chance to gain knowledge due to economic shackles. IIT (ISM) provides financial assistance/scholarships to a large number of students. Under IIT (ISM) merit – cum- means scholarship, the Institute provides scholarships to a number of students which includes tuition fee reimbursement in full, apart from some amount of financial assistance per month. Under New Central Sector Scholarship Scheme, a few students belonging to SC and ST categories are provided free boarding and lodging every year. Besides, there are a host of scholarships sponsored by different State Governments and Public and Private corporate sectors, including endowment scholarships. For further information, please visit:

<https://people.iitism.ac.in/~dsw/siw.html>

Above all, IIT(ISM) offers a full fee waiver to the top five students admitted on the basis of JEE (Advanced) and having rank up to 600 in the Common Rank List (CRL).

For details, please visit:

https://people.iitism.ac.in/~download/admission/jeea/Fee_Waiver_Notification-rank-holders.pdf

Training & Placement

The training and placement cell of the Institute, headed by a senior faculty member, maintains active association and excellent contacts with industries and the corporate sectors to secure jobs in various organizations of the country and abroad. The placement cell coordinates the placement activities to match the needs of the industry with the aspirations of the students.

For detailed information, please visit: <https://cdc.iitism.ac.in>

Industry And Alumni Relations

Industry and Alumni Relations : IIT(ISM) is proud of its alumni. Traditionally, IIT(ISM) alumni hold top positions in industries and government offices. Graduates of this Institute are heading public and private sector companies and also holding key positions in the areas of academics and research both in India and abroad (USA, Canada, Australia, etc.). IIT (ISM) PVS (ISMAA) is extremely active and vibrant in meeting its objective of enabling the alumni to keep in touch with the Alma mater, to promote and foster spirit-de-corps amongst the past and present students and the teachers of the Institute, and to contribute towards the furtherance of science and technology through its seven national and one international chapters located respectively in Bhubaneshwar, Dhanbad, Delhi, Ranchi, Kolkata, Mumbai, Nagpur, and North America. IIT (ISM) PVS (ISMAA) actively promotes various annual awards to students and teachers for academic/research excellence in IIT (ISM). The

association also provides international travel grants for students to present papers in various technical forums abroad.

For more information, please visit: <https://alumni.iitism.ac.in/>

International Relations & Alumni Affairs (IR & AA): Office of International Relations & Alumni Affairs (IR & AA) is the primary coordinating center for communication, events, and other activities on behalf of the Dean of International Relations & Alumni Affairs (IR & AA). The Office and the Students' Alumni Cell and ISM Alumni Association (ISMAA) organize the Annual Alumni Meet, Basant Samman, Distinguished Alumni Awards (during Convocation), and other alumni-related events. The office is launching programmes such as Serve Your Alma Matter/ Student Mentorship Programmes for the overall institutional development, alumni connect, and improved global ranking of the Institute. The IRAA Office strives to excel in International Relations & Alumni Affairs by creating an effective platform for the alumni, faculty, and students of the Institute.

An International Relation Cell (IRC) is established in the office of the Dean (IRAA) to look after the smooth functioning of the office with the sole objective of promoting internationalizing of IIT (ISM), Dhanbad.

For more information, please visit: <https://ir.iitism.ac.in/>

Recreational/Extra Curricular activities

The Institute has unique infrastructural facilities on campus for indoor/ outdoor games and sports. The upper and lower grounds constitute a beautiful arena for outdoor games and annual sports. The Sports Complex comprises infrastructure for tennis, basketball, volleyball, and badminton. A Student Activity Centre (SAC) equipped with a state-of-the-art gymnasium, yoga center, indoor sports facilities, and Olympic size swimming pool provides ample facility for building and toning up physical and mental health. Srijan, the biggest cultural-management festival of Eastern India, is organized by the ISS body of students every year, which draws nationwide participation from different Institutes. A number of student societies and hobby clubs functioning on the IIT (ISM) campus are potential avenues to unleash students' creativity and imagination in constructive events.

For more information, please visit: <https://people.iitism.ac.in/~dsw/index.html>

Location and Accessibility

Dhanbad, being one of the largest cities in the East Indian state of Jharkhand, is well connected with the rest of the state and the rest of the country through roads, rail, and air.

Rail: Dhanbad Junction Railway Station, located just 3 km from the IIT (ISM) Campus, is the nearest railway station. Autos and Taxis are readily available 24/7 to take you from the Dhanbad Railway Station to the IIT(ISM) campus, where one can also avail online cab services like Ola.

Air: The nearest public airports to IIT (ISM) Dhanbad are:

- Kazi Nazrul Islam Airport, Durgapur 95 KM
- Deoghar Airport, Deoghar, 115 KM

- Birsa Munda Airport, Ranchi 157 KM
- Gaya Airport, Gaya, 212 KM
- Netaji Subhas Chandra Bose International Airport, Kolkata 269 KM.

IIT (ISM) being situated at the core of the industrial base of the region covering mines, steel plants, fertilizer plants, refractories, heavy machine building plants, etc., derives locational advantage in learning and teaching process in terms of keeping abreast with changing technology in the industry.

IIT (ISM) Dhanbad

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Tools

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Motto in English	Arise, Awake, strive for the highest and be in the light
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Type	Public technical university
-------------	-----------------------------

Established	1926; 98 years ago
--------------------	--------------------

Chairman Prem Vrat

Director Jamini Kanta Pattanayak

(I/C)

Academic staff 373^[1]

Students 8,101^[1]

Undergraduates 3,732^[1]

Postgraduates 1,951^[1]

Doctoral students 2,418^[1]

Location Dhanbad, Jharkhand, India

 23.8133°N 86.4419°E

Campus Urban

218 acres (0.88 km²)

Nickname IITians

Website www.iitism.ac.in

Indian Institute of Technology (Indian School of Mines) Dhanbad is a [public technical university](#) located in [Dhanbad](#), India. IIT Dhanbad is an [Institute of National Importance](#), and is ranked among the premier engineering institutions of India.^[2]

Indian Institute of Technology Dhanbad is located in the mineral-rich region of India, in the city of [Dhanbad](#). It is the third oldest institute (after [IIT Roorkee](#), and [IIT \(BHU\) Varanasi](#)) which got converted into an IIT.^{[3][4]} It was established by [British Indian Government](#) on the lines of the [Royal School of Mines - London](#), and was formally inaugurated on 9 December 1926 by [Lord Irwin](#), the then [Viceroy of India](#).^[5] It started as an institution to impart education in mining and mineral sciences, and today, has grown into a technical institution with various academic departments. IIT (ISM) Dhanbad admits its undergraduate students through [Joint Entrance Examination \(Advanced\)](#), previously [IIT-JEE](#).^{[6][7]}

On 25 May 2016, the [Union Cabinet](#) headed by [Prime Minister Modi](#) gave its approval to amend the Institutes of Technology Act, 1961 for conversion of ISM Dhanbad into an [Indian Institute of Technology](#).^{[8][9]} The amendment was approved by [Indian Parliament](#) and upon Presidential assent, was notified in the Gazette of India on 10 August 2016.^[10]

History[edit]



Heritage Building at IIT Dhanbad



New Academic Complex at IIT Dhanbad

The Indian National Congress at its XVII Session of December 1901 passed a resolution stating that:^{[11][12]}

The Indian National Congress is of opinion that a Government College of Mining Engineering be established in some suitable place in India on the models of the Royal School of Mines in England...

The McPherson Committee formed by [Government of British India](#), recommended the establishment of an institution for imparting education in the fields of [mining](#) and [geology](#), whose report, submitted in 1920 along with approach of Indian Mine Managers' of India in 1924, formed the main basis for establishment of the Indian School of Mines & Applied Geology at Dhanbad on 9 December 1926.^{[5][13]} From 1926 to 1946 it was led by Prof [F. W. Sharpley](#).^[14]

The institute originally offered courses mainly in [Mining Engineering](#) and Applied Geology when it opened. In 1957, the institute began offering courses in [Petroleum Engineering](#) and Applied [Geophysics](#) and the name was changed to Indian School of Mines. Up to 1967, it was a government institute where the faculties were recruited through [Union Public Service Commission \(UPSC\)](#).

The school was granted university status by the [University Grants Commission](#) under the [University Grants Commission Act, 1956](#) in 1967. Later courses in Mining Machinery Engineering and Mineral Engineering were started in 1975 and 1976 respectively. It was among the few institutes to start courses in [Industrial Engineering](#) and Management (in 1977), to cater to the needs of industries like [metallurgy](#), mining and [manufacturing](#).

From 1996 to 1997 the school came directly under the financial and administrative controls of [Ministry of Human Resource Development, Government of India](#) with pay scales and perks to its employees at par with that of [Indian Institutes of Technology](#) and [Indian Institutes of Management](#). In 1997, the institute began admitting students through the IIT Joint Entrance Examination ([IIT-JEE](#)) conducted jointly by the IITs and ISM.^[15] In 1998 courses for [Electronics Engineering](#) and [Computer Science and Engineering](#) were introduced and in 1999, the institute started a bachelor of technology course in [Mechanical Engineering](#).

In 2006, IIT (ISM) Dhanbad added 14 new courses, prominent among them being [Electrical Engineering](#) and a course in [Environmental Engineering](#) in the undergraduate curriculum. From 2006, IIT (ISM) Dhanbad also started offering Integrated Master of Science (Int. MSc) in Applied Physics, Applied Chemistry and Mathematics & Computing, and Integrated Master of Science and Technology (Int. MSc Tech) courses for Applied Geology and Applied Geophysics. In 2011, the institute offered a BTech programme in [Chemical Engineering](#). The institute introduced [Civil Engineering](#) in 2013 and [Engineering Physics](#) in 2014.

Conversion to Indian Institute of Technology^[edit]

While a proposal to upgrade ISM Dhanbad to an [Institutes of National Importance](#) had been put as early as 1994 by a Government Committee,^[16] no action was taken by the Government over this proposal.

A proposal for the conversion was included in the 12th Five year plan after its passage through the [National Development Council](#) (NDC), on 27 December 2012,^[17] and put across the IIT Council on 7 January 2013.^[18]

The Union Finance Minister [Arun Jaitley](#), during his budget speech in [Parliament](#) on 28 February 2015, proposed to upgrade ISM Dhanbad into an IIT.^{[19][20]} On 25 May 2016, the Union Cabinet approved that a bill be introduced in Parliament for converting ISM Dhanbad into an IIT.^[9] On 19 July 2016 the Institutes of Technology (Amendment) Bill, 2016 was introduced into the Lok Sabha. It was passed by the Lok Sabha without opposition on 25 July 2016. The Rajya Sabha unanimously passed the Bill on 2 August 2016. The Bill got the Presidential assent and a Gazette notification was made on 6 Sep 2016, thus officially conferring [Indian Institute of Technology](#) tag to erstwhile [Indian School of Mines, Dhanbad](#)^[21].

Campus[\[edit\]](#)

IIT (ISM) Dhanbad campus^[22] total campus size is around 444.98 acres, and with its main campus of size approximately 218 acres located in Sardar Patel Nagar of Dhanbad and 226.98 acres of upcoming campus in Nirsa, Dhanbad. The institute has around 8101 students with 3732 undergraduate students, 1951 postgraduate students, and 2418 doctoral students.

Hostels[\[edit\]](#)

The institute has 11 hostels which are all named around some precious stones like Diamond, Sapphire, Amber, Ruby, Opal, Jasper, Aquamarine. Some of these hostels are as old as 94 years, and have capacities ranging from 400 to 2200 students. Four of them are for girls and remaining Seven for boys, both include one hostel each for international students.



Topaz Hostel



Diamond Hostel



Emerald Hostel



Rosaline Hostel



Jasper Hostel

Hotspots [edit]

The campus has various places^[23] where students like to spend their major portion of their time apart from taking classes in the lecture halls.



Central Library



Golden Jubilee Lecture Theatre (GJLT)

These include: Student Activity Center (SAC), Main Canteen, Ram Dhani (RD), Library Basement, Penman Auditorium, Heritage Building, Oval Garden, and the Seismographic observatory.

Organisation and administration[\[edit\]](#)

Departments[\[edit\]](#)

IIT (ISM) Dhanbad has the following departments^[24] offering courses in various academic programs:

Engineering	Basic Sciences
-------------	----------------

- | | |
|--|--|
| <ul style="list-style-type: none"> ● Department of Chemical Engineering ● Department of Civil Engineering ● Department of Computer Science and Engineering^[25] ● Department of Electrical Engineering ● Department of Electronics Engineering ● Department of Environmental Engineering ● Department of Fuel, Mineral and Metallurgical Engineering ● Department of Mechanical Engineering ● Department of Mining Engineering ● Department of Mining Machinery Engineering ● Department of Petroleum Engineering | <ul style="list-style-type: none"> ● Department of Chemistry ● Department of Applied Geology ● Department of Applied Geophysics ● Department of Mathematics & Computing ● Department of Physics |
|--|--|

Social Sciences

Business

Department of Humanities and Social Science	Department of Management Studies (Formerly Industrial Engineering & Management)
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Research Centres & Industry Interaction Centres[\[edit\]](#)

- An eight-storey Central Research Facility has been set up at IIT (ISM) Dhanbad as a Centre of National Importance.^{[26][27]} IIT (ISM) works as a think tank for eleven ministries of the Govt. of India.^[28]
- Industry Institute Interaction Facility, Kolkata: An Industry Institute Interaction Facility, Kolkata has been established in [Kolkata](#), for hosting campus interviews and international conferences, etc.^[29] Another Industry Institute Interaction Facility is being set up in [Delhi](#), and will be ready by 2016.^[30]
- The Environmental Information System (ENVIS), a centre at Centre of Mining Environment (CME), Indian School of Mines (ISM), was established in 1991 by the Ministry of Environment and Forests (MoEF), Government of India, for collection, storage, retrieval and dissemination of information in the area of mining environment.^[31]
- AICCET- Australia India Clean Coal and Energy Technology Center - It is a joint center between IIT(ISM), Dhanbad and Curtin University, Australia and it is located at Fuel, Minerals and Metallurgical Department building at IIT(ISM)^{[32][33]}

Academics[\[edit\]](#)

Academic programs[\[edit\]](#)

IIT (ISM) Dhanbad offers courses^[34] in engineering, pure sciences, management and humanities with a focus on engineering. The institute has 18 departments and five inter-disciplinary centers. The Department of Mining Engineering has been accorded the status of "Center of Advanced Studies" by the [University Grants Commission](#).

Admission to the courses of BTech and Integrated BTech-MTech are done from [JEE Advanced](#) qualified students. Admission to the MTech courses are done either through the [Graduate Aptitude Test in Engineering](#) (GATE) or through a special examination conducted by the institute. Admissions to the MBA program is done through the [Common Admission](#)

Test (CAT). Admission to the MSc, Integrated MSc-MTech course and PhD courses are done through exams conducted by the institute.

Various courses offered by institute include:

- BTech Course (Duration – 4 Years)
- Integrated BTech-MTech Course (Duration - 5 Years)
- MTech Course (Duration - 2 years)
- MSc Course (Duration – 2 Years)
- Integrated MSc-MTech Course (Duration - 3 years)
- MBA Programme (Duration – 2 years)
- PhD
- Post-Doctoral Fellowships (PDFs)

Rankings[\[edit\]](#)

University and college rankings

General – international

QS (Asia) (2023)^[35] 281–290

Times (World) (2023)^[36] 1001–120
0

Times (Asia) (2022)^[37] 251-300

Times (Emerging) (2022)^[38] 251-300

General – India

NIRF (Overall) (2022)^[39] 38

Engineering – India

[NIRF \(2023\)](#)^[40]

17

Business/Management – India

[NIRF \(2022\)](#)^[41]

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Internationally, IIT (ISM) Dhanbad was ranked 281–290 in Asia on the [QS World University Rankings](#) of 2023.^[35] It was ranked 1001–1200 in the world by the [Times Higher Education World University Rankings](#) of 2023,^[36] 251–300 in Asia in 2022^[37] and in the same band among emerging economies.^[38]

In India, it was ranked 17 among engineering colleges by the [National Institutional Ranking Framework](#) in 2023 in Engineering category^[40] and ranks 38 in the Overall category.^[39]

The institute was ranked 46th in [NIRF](#) for its management course floated by the Department of Management Studies in 2022.^[41]

Student life^[edit]

Fests and Events^[edit]

The institute hosts many fests including *Srijan* - The cultural fest of IIT (ISM), *Concetto* - The Tech-fest, *Parakram* - Games and sports fest, *Basant* - The alumni re-union, and *Pratibimb* - The inter departmental cultural fest. Apart from these the institute also hosts inter-house sports and cultural competitions and technical fests of various departments.^[42]

Student Gymkhana^[edit]

The Students' Gymkhana^[43] (SG) gives students a role in the administrative and academic governance of the Institute and helps them develop leadership and administrative skills. SG activities subordinate to academic activities. The SG functions through the Students' Senate and its Executive wing. The Senate is the Central Representative, Legislative and Supervisory body of the students. The student body is elected through gymkhana elections held every year in the month of march.

Sports & Physical Education Centre (SPEC)[\[edit\]](#)

The professional world needs human force skilled in not only IQ, but also in EQ. The professional spheres require people to learn how to work as a part of a team, how to be in the company of the people who might not be complementary to your own self but working with each other to realize each other's potentials to the maximum, how to follow orders and deliver orders when time demands, how to work with your team to the end of the line. Looks like a lot to do, doesn't it? Well, we have got a straightforward solution for you to join a sports club. Welcome to our family of IIT ISM's Sports clubs!

Placements[\[edit\]](#)

IIT (ISM) Dhanbad has achieved a milestone in placements, with over 750 students securing placements this year.(This placement record is till now 7th Feb 24) The average package this year has reached up to 13.13 lakh rupees, although there has been a slight decrease. The highest package offered to students this year is 60 lakh rupees. Major companies offering job offers include Google, Microsoft, Accenture, Siemens, Tata Steel, Tata Motors, Jaguar Motors, and Land Rover, among others.^[44]

Notable alumni[\[edit\]](#)

- [Rabi Narayan Bastia](#), Padma Shri awardee, [geoscientist](#), known for his contributions in the [hydrocarbon](#) explorations at [Krishna Godavari Basin](#)^[45]
- [Vijay Prasad Dimri](#), Padma Shri awardee, [geophysical](#) scientist, known for his contributions in [earth sciences](#)^[46]
- [Harsh Gupta](#), Padma Shri awardee, [earth scientist](#) and [seismologist](#)^[46]
- [Waman Bapuji Metre](#), [Padma Bhushan](#) awardee, pioneer in the Indian oil industry^[47]
- [Shyam Sundar Rai](#), seismologist, [Shanti Swarup Bhatnagar](#) laureate^{[48][49]}
- [T. C. Rao](#), Father of Indian Mineral Processing, Founding HOD, Fuel, Mineral and Metallurgical Department (FMME), IIT(ISM) Dhanbad
- [Gulshan Lal Tandon](#), [Padma Bhushan](#) awardee, a pioneer in the Indian Mining Industry and former CMD of [Coal India](#).

Indian Institute of Technology Gandhinagar

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	Palaj, Gandhinagar - 382055, India
Contact Person For Admission:	Mr. Viral Shah
Designation:	Assistant Registrar (Academics)
Email:	academics@iitgn.ac.in
Alternate Email:	
Phone Nos:	07923952053
Fax No:	
Mobile No.:	07923952051

About the Institute

IIT Gandhinagar is a nationwide leader on two fronts, its holistic, well-rounded, and cutting-edge undergraduate curriculum, and its student-centric approach resulting in a nurturing, safe, and vibrant environment for its students.

IIT Gandhinagar provides a strong foundation in engineering fundamentals, project-based and hands-on learning, a flexible curriculum and a wide range of diverse courses that promote critical thinking. It affords opportunities for a deeper understanding of technology, Indian society, international experiences, leadership, communications and overall development beyond the curriculum. IIT Gandhinagar's unique innovations include:

- A four-week immersive foundation programme (for all undergraduates) to nurture creativity, communication skills, ethics, teamwork, social engagement, and physical fitness. This has now been emulated by several IITs and other engineering institutes.
- A fully-funded international internship programme that enables our undergraduates to receive study abroad or other international opportunities before they graduate.
- A flexible and broad-based curriculum that enables students to study topics and streams of their interest.
- A very liberal branch change policy, numerous elective courses, interdisciplinary minor programmes, dual major and dual degree programmes.

- A unique explorer fellowship programme that supports students to travel the length and breadth of the country in teams to experience India intimately at the grassroots.
- Advanced pedagogical initiatives, including active learning and learning-by-doing approaches across the curriculum. The Institute has developed several special platforms to execute project-focused learning: a Creative Learning Centre, Maker Bhavan, a Writing Studio, a 24-hour Tinkerer's Lab managed entirely by students, etc.

IIT Gandhinagar's student-centric approach is widely recognized for creating a nurturing, safe and vibrant environment for its students, such as:

- Modern hostel facilities, including air conditioning in all rooms, conveniences, and facilities (including shops, cafes, student lounge, mini library, clay studio) in the hostels, along with a dedicated set of hostel caretakers stationed in the hostels.
- Extremely liberal financial aid and scholarship programmes that ensure that no student feels disadvantaged due to their financial circumstances.
- Excellent food quality with a focus on hygiene, nutrition, and quality ingredients in its student messes and in all eateries and cafes. The campus received an exemplary (5-star) Eat Right Campus award from India's FSSAI (Food Safety and Standards Authority of India), the first campus in the country to receive this award.
- A highly responsible student body promotes independence and ethics at various levels and in the policies of the Institute. This has ensured a ragging-free campus and a high level of ethical conduct in exams and overall behaviour.
- A high emphasis on student emotional wellbeing with very proactive counselling services by professional counsellors, faculty advisors, and student guides that keep in constant touch with every student.
- An award-winning campus on the banks of the Sabarmati river recognized for outstanding designs and green initiatives. The campus has received the five-star GRIHA LD rating (the first campus in India to receive one) and several HUDCO awards.
- Heavy emphasis on the overall development of students, including sports, physical fitness, art and other extracurricular activities.
- Wide range of opportunities for students to participate in social and leadership initiatives.

Fee Structure

First-year undergraduate students are expected to join on the 31st of July 2023. A detailed academic calendar can be seen on the academic calendar page (<https://iitgn.ac.in/academics/calendar/acadcal-2023-24>).

Current semester-wise fee structure for the BTech programme:

One-time Admission Fee + Refundable Security Deposit (in Rs.)	Tuition (in Rs.)	Other Allied Charges (in Rs.)	Mess and Laundry Advance Fee (in Rs.)	Hostel Seat Rent, Utilities, etc.(in Rs.)	Total Fees (in Rs.)
12,750	1,00,000	8,338	21,000	17,250	1,46,588

For the BTech-MTech dual degree, the fees will be the same as that of the BTech programme till the completion of the eighth semester and will be as per the MTech programme afterwards. The applicable fees for the first semester and the due date for payment of fees will be communicated in due course of time.

NOTE:

- Mess and Laundry Advance Fee is estimated based on current rates and is subject to change.
- The refundable security deposit is Rs. 5,000/-, and the one-time admission fees is Rs. 7,750/-.
- SC, ST and PwD (with a minimum 40% disability) students will be eligible for a waiver of tuition fees (Rs. 1,00,000 per semester).
- The Institute has extended the full tuition fee waiver/reimbursement facility to UG students having an annual parental income of up to Rs. 2.5 Lakhs. Students whose family income is between Rs. 2.5 Lakh to Rs. 5.0 Lakhs per annum shall pay only 1/3rd of the tuition fee.
- The students whose annual family income is less than Rs. 9,00,000/- shall have access to interest-free loans under the Vidyalaxmi scheme for the total portion of the tuition fee payable.
- Further, students may request financial support such as scholarships, grants, and loans.

Academic Structure

IIT Gandhinagar offers a 4-year BTech programme in seven disciplines (Artificial Intelligence, Chemical Engineering, Civil Engineering, Computer Science & Engineering, Electrical Engineering, Materials Engineering and Mechanical Engineering) and BTech-MTech Dual Degree programme in Computer Science & Engineering, Electrical Engineering and Mechanical Engineering. The curriculum is futuristic and focuses on the overall development of students. It emphasizes learning-by-doing and includes significant exposure to the humanities and social sciences, mandatory courses in life sciences and design, and several options for students to explore their interests through a large number of electives and project courses. Active learning and exploration are emphasized over older, routine pedagogical approaches.

Flexibility is built into the curriculum with numerous electives, liberal branch and programme change norms, various minors, honours, dual-major programs, and many short courses offered by guest scholars.

Branch Change: To provide an environment where students are free to develop their passions, IIT Gandhinagar has adopted a very liberal policy for branch/programme change. After successful completion of the first two semesters, students may apply for a branch/programme change. The current guideline for branch change followed at IIT Gandhinagar is as follows:

- A student with a CPI of 9.50 or higher is allowed a change of branch without any restriction.
- For others, change is considered in order of merit determined by the CPI (with a minimum of 6.50 without any fail grade/backlogs are eligible).

For example, a student who is admitted to Mechanical Engineering and has secured a CPI of more than 9.5 at the end of two semesters could be allowed a change of branch to Chemical Engineering OR a student who has been admitted to the BTech-MTech dual degree in Electrical Engineering could request for a change of programme to BTech in Electrical Engineering.

Programme Change: Students admitted to the BTech-MTech dual degree programmes through direct admission mode are eligible for a change of programme/branch. This one-time change will be at the beginning of the second year and will be governed by the same branch change policies followed for BTech programmes. For this purpose, the direct admission BTech-MTech dual degree programmes will be considered equivalent to a branch of a regular BTech programme. For example, a BTech-MTech Dual Degree in Computer Science and Engineering student could change the programme to BTech in Chemical Engineering, BTech in Computer Science & Engineering, or BTech-MTech Dual Degree in Electrical Engineering. Similarly, a student admitted to BTech in Chemical Engineering could change the programme to direct admission BTech-MTech Dual Degree programmes in addition to options for change of branch among the regular BTech disciplines.

At the beginning of the second year, after a round of re-allotment of students following the branch change policy mentioned above, students in a direct admission BTech-MTech dual degree programme can request a change of programme within the discipline before the beginning of the second year. This change can be permitted based on merit (similar to a regular branch change), with the constraint that the number of students on roll in the direct admission BTech-MTech dual degree programme does not fall below 50% of its sanctioned strength. The merit at the end of the first year of the BTech programme will be considered for this programme change (without fail grades/backlogs). Change of programme from BTech-MTech dual degree to regular BTech programme can be effected only once at the beginning of the second year.

Dual-Major Options: BTech students can also opt for a Dual-Major Programme during their course of study to earn an additional BTech degree in a second branch of their choice. For example, a BTech student in Chemical Engineering could opt for a second BTech in Computer Science & Engineering.

Dual-Degree Options: Students who joined a regular BTech programme can also choose to sign up for the Dual-Degree Programme, which enables students to get an MTech or an MSc degree in a branch of their choice (possibly different from their BTech branch) in addition to the BTech degree usually by spending an additional year. Two separate degrees are awarded upon

successful completion of the requirements of the two programmes. For example, a BTech student in Computer Science & Engineering could opt for an additional MSc degree in Mathematics or an MTech degree in Electrical Engineering.

Minors Programme: A student enrolled in any branch can opt for one or more minors by completing additional relevant courses. The following minors are currently available at IIT Gandhinagar:

Automobile Engineering, Biological Engineering, Chemical Engineering, Chemistry, Civil Engineering, Cognitive Science, Computer Science & Engineering, Data Analytics, Data Sciences, Design, Earth Sciences, Electrical Engineering, Humanities & Social Sciences, Management, Materials Engineering, Mathematics, Mechanical Engineering, Natural Sciences, Physics, Robotics, Safety Engineering, Sustainable Development.

For example, a BTech student in Mechanical Engineering can opt for a Minor in Computer Science & Engineering and/or a minor in Management.

Honours Programme: A provision of Honours is available to all students as an add-on to the BTech degree. Students can enroll for additional courses and projects in addition to the minimum requirements of a BTech degree to enhance the core competence in their discipline and earn BTech with Honours.

Other Academic Opportunities: Undergraduate students also have significant opportunities for additional learning through various internships both in India and abroad. Usually, nearly 40% of the undergraduates spend time overseas, largely in the form of summer internships, undertaking research at leading universities around the world, thereby gaining global exposure. Many students also take up internships in industry, thus bringing a real-world, application-oriented perspective to their education. These programmes are supported through generous scholarships. For more details, visit: <https://www.iitgn.ac.in/academics/>

Rules For Change Branch

To provide an environment where students are free to develop their passions, IIT Gandhinagar has adopted a very liberal policy for branch/programme change. After successful completion of the first two semesters, students may apply for a branch/programme change. The current guideline for branch change followed at IIT Gandhinagar is as follows:

- A student with a CPI of 9.50 or higher is allowed a change of branch without any restriction.
- For others, change is considered in order of merit determined by the CPI (with a minimum of 6.50 without any fail grade/backlogs are eligible).

For example, a student who is admitted to Mechanical Engineering and has secured a CPI of more than 9.5 at the end of two semesters could be allowed a change of branch to Chemical Engineering OR a student who has been admitted to the BTech-MTech dual degree in Electrical Engineering could request for a change of programme to BTech in Electrical Engineering.

Faculty

IIT Gandhinagar is a truly global environment for student learning. The Institute has recruited world-class faculty members trained at some of the world's leading institutes. These include MIT,

Princeton, Harvard, Carnegie Mellon, Cambridge, Columbia, Cornell, Purdue, Michigan, Imperial College, Vanderbilt, Georgia Tech, Penn State, Wisconsin, UT Austin, Illinois, Max Planck, Warwick, as well as prestigious Indian Institutions, such as IISc, IISERs and IITs. More than 80% of the faculty members have been trained abroad, either at the doctoral or postdoctoral level.

A vibrant visiting faculty programme and a flexible short-course structure expose students to scores of prominent scholars and professionals from all over India as well as abroad. The faculty are welcoming, friendly, and approachable. For more details about faculty at the Institute, visit: <https://www.iitgn.ac.in/faculty>

Facilities

The campus has a world-class hostel and academic infrastructure and is largely self-sufficient, with most daily needs and services available within the campus.

Hostels: IIT Gandhinagar has centrally air-conditioned and furnished hostels that are designed to be inviting for students to engage in interactions across disciplines and to create a healthy culture. The hostels are a place of constant innovation, with facilities aimed at the overall development of the student. Dining facilities are available in hostel messes. Other amenities within the hostel premises are:

- Convenience shops and eateries serving a variety of cuisines, snacks, and daily needs.
- Mini Library (providing a reading zone to students within the hostel premises).
- Night-time air conditioning in all hostel rooms.
- Laundry services included in the “Mess and Laundry” charges with unlimited washing and ironing facility.
- A pantry on each floor of each hostel equipped with a refrigerator, microwave oven and induction stove.
- Student lounge, with recreation facilities, such as a snooker table, foosball, air hockey table etc.
- Music room, art room, and common rooms.
- State-of-the-art sports complex with swimming pool, courts, and additional facilities for student recreation.
- A newly built clay studio for the expression of student creativity.
- Distributed spaces for students for tinkering and innovations.
- An open-air theatre.

Computing and Connectivity: IITGN has state-of-the-art computing infrastructure, labs with networked multi-core computers and a high-performance computing (HPC) platform for advanced research and teaching in computational areas. Supercomputer PARAM Ananta was recently commissioned at IIT Gandhinagar.

Library: The library possesses a rich collection of books, research journals, and electronic resources in varied areas. Library electronic resources are accessible from anywhere on campus.

Labs: The Institute has cutting-edge teaching and research laboratories in numerous areas to expose students to the latest research in different areas of science and engineering.

Sports: Grounds for football, cricket, outdoor and indoor courts for volleyball, badminton and basketball, indoor facilities for table tennis, gym, squash, yoga and Olympic sized swimming pool are available. Athletic tracks and a climbing wall are also provisioned within the newly constructed Sports Complex. Sports coaches are available to train the students. Participation in sports activities is highly encouraged through a number of formal and informal initiatives.

Bank and Post: Canara Bank (with ATM facility) and a Post Office are located within the campus, and postal services through private logistic agencies are available at the campus on a payment basis.

Award-winning Campus: IITGN campus is the first campus in the country to receive a five-star GRIHA-LD rating for its numerous sustainability and energy efficiency measures. The Institute is the first and only academic campus to be awarded a five-star Eat Right Campus award by FSSAI for its hygienic, safe, healthy, nutritious, local & seasonal food choices. IITGN has also been awarded National Water Award, AESA award and MGNCRE Award.

Medical Facilities: A 24-hour ambulance is available for emergencies. Qualified medical practitioners are available on the Institute premises for several hours daily. Hospitalization expenses of all students are covered under a medical insurance policy. Three trained nurses (two male and one female) are on staff full-time to provide emergency first aid and routine medical services. A fully equipped Physiotherapy Centre is also operational on campus.

Counselling Services: A dedicated counselling team of counsellors are available on campus. They oversee the emotional and psycho-social wellbeing of the entire campus community, including students, staff and faculty. More information at: <http://sites.iitgn.ac.in/counselling/>

Student Life at Institute

IIT Gandhinagar's student-centric approach emphasizes student responsibility, independence, and physical and emotional wellbeing. IITGN prides itself in maintaining a ragging-free campus and a high level of ethical conduct in all academic and non-academic matters. Along with rigorous academic training, students pursue a large number of additional curricular and extracurricular activities (through several student clubs, sports camps, and other initiatives) for their holistic development. Several student festivals and events are celebrated on campus, including Blithchron, Amalthea, Jashn, Ignite, Halla Bol, Winter Carnations, etc.

Friendly and professional staff are available to help students with their various needs in hostels and other areas. Student emotional wellbeing is a high priority at IIT Gandhinagar. The Institute has very proactive counselling services consisting of professional counsellors, faculty advisors, student guides and other supporting mechanisms to keep in close touch with each individual student. More information is available at: <https://www.iitgn.ac.in/student/lifeoncampus/>

Flagship Programmes and Initiatives

Foundation Programme: The Institute's flagship Foundation Programme is now being emulated by several IITs and other colleges. This programme nurtures students' creativity, communication skills, ethics, physical fitness, and social awareness, thereby setting the foundation for the creation of engineers who are not just technically sound but also socially aware and responsible citizens. Such "life skills" are emphasized throughout the students' stay at the Institute through various other activities.

International Opportunities: Usually, nearly 40% of IITGN undergraduate students typically participate in study abroad or other international opportunities before graduation. These opportunities developed through partner collaborations are funded entirely by the Institute and its international partners, at virtually no cost to students.

Student Leadership Initiative: Leadership development and life skills are among the core pillars of IIT Gandhinagar's educational experience. Leadership is woven through a student's journey at IIT Gandhinagar and embedded in many ways, both tangible and intangible. In partnership with Indira Foundation, IITGN offers a regular sequence of workshops, short courses, events, one-on-one tutoring sessions, etc., around leadership. They cover a wide range of competencies, such as oral and written communications; people skills (team, collaboration, and leadership); critical and visionary thinking; and physical and mental health, which are all crucial for personal satisfaction and professional success, regardless of career paths chosen.

Explorer Fellowship: The IITGN Explorer Fellowship is an annual summer programme that enables students, organised in small teams, to undertake a six-week adventure across the country. The programme empowers students to plan and travel with a limited budget throughout the country to observe India intimately at the grassroots level and encounter diverse cultures and lifestyles. The fellowship is entirely funded by the Institute and requires no costs by the students.

Gram Fellowship: The IITGN Gram Fellowship aspires to sensitise the students towards the concern of rural living by exposing its students to rural India. This fellowship is for the students to experience the life of common people who may not have access to sufficient resources. It would also be an opportunity for the fellows to think beyond technological interventions to address the concerns of the community. The fellowship is entirely funded by the Institute and requires no costs by the students.

Campus Jobs: The "On-Campus Employment Opportunities (oCEO)" programme aims to provide students with first-hand employment and job experience. This programme is meant to help the students on 'High-Quality Job experience', 'Inculcate Higher Responsibility', 'Develop Leadership and Life-skills', 'Opportunity to Earn' and 'Meet Human Resource Requirements' of the Institute. In addition, the students can contribute significantly to continuing education programmes and various other initiatives of the Institute.

Academic Support: Numerous academic support initiatives are available to students:

- Each student is assigned a faculty advisor who guides them through understanding the curricular requirements and remains assigned to them through their tenure at the Institute.
- Our unique peer-assisted learning (PAL) programme is designed to help first-year students who face difficulties in adapting to a new culture and medium of instruction in their coursework.
- Academic discussion hours, facilitated by senior students, provide support on more technical matters to students who may be facing challenges in certain courses.

- For speedy integration of new students into IITGN, 10-12 students are assigned a student guide who acts as a guide and mentor for the student during their first year.
- A robust and proactive counselling service offers a mechanism to address broader issues related to student wellbeing.

Financial Assistance

IITGN believes that financial constraints should not be an obstacle in the academic pursuit of any student and offers a wide range of extremely liberal financial aid and scholarship programmes to ensure that no student feels disadvantaged due to their financial situation. Beyond supporting students with financial needs, a wide range of special projects, work opportunities, international and domestic internships, and other academic expenses are also supported through such programmes. Students can apply for tuition fee waiver programmes, financial assistance programmes, and apply to pay tuition and other fees in instalments (based on financial need). For more information, please visit the scholarships page (<https://iitgn.ac.in/students/scholarships-overview>).

A summary of the financial assistance schemes, provisions for tuition fee waiver scheme, educational bank loan facility, details of existing excellence and donor instituted scholarships, and other provisions such as On-Campus Employment Opportunities (o-CEO) programme, etc. are as follows:

1. There are a number of Donor Scholarships (currently 75 scholarships) listed below that support various activities, including international and domestic internships, special projects, and financial needs.
 - Seventy One (71) scholarships worth Rs. 1 Lakh per year
 - One (1) scholarship worth Rs. 50,000/- per year
 - One (1) scholarship worth Rs. 40,000/- per year
 - Two (2) scholarships worth Rs. 20,000/- per year
2. There are currently 28 excellence scholarships – for demonstrating outstanding performance (irrespective of their parental income), each worth Rs. 20,000/- per year.
 - Eighteen (18) academic excellence scholarships
 - Six (6) excellence in sports and games scholarship
 - Two (2) excellence in arts and culture scholarship
 - Two (2) excellence in social work and leadership scholarship
3. IITGN also provides generous grants and interest-free short-term and long-term loans based on students' need to support their academic requirements, excellence activities, purchase of laptop/PC and in some cases even for personal expenses. Students can also apply to pay tuition and other fees in instalments.
4. Scholarships and financial support for international internships, financial rewards for undergraduate research publications are also made available.

5. The Institute, in association with Tata Motors Ltd., provides financial assistance to students from economically weaker backgrounds through the TML-FAP (Tata Motors Ltd. Financial Aid Program), which is open to all undergraduate students of IIT Gandhinagar.
6. The o-CEO (On-Campus Employment Opportunities) programme aims to help students to get first-hand professional work experience while getting paid for it. The selected students' under o-CEO can work for a maximum of 10 hours per week during the semester and 40 hours per week during vacations. The remuneration provided is tentatively in the range of Rs.150 - 200/- per hour.

Note that all scholarships are subject to the student continuing to maintain a reasonable academic record and ethical conduct. More information is available at:

<http://www.iitgn.ac.in/student-scholarships>.

Training & Placement

IIT Gandhinagar students pursue diverse career paths, including corporate jobs in various sectors, government jobs, higher studies, entrepreneurship, and social and other pursuits. In the last three years, ~20% of graduating students opted to pursue higher studies from some of the best universities/institutions abroad and in India. The Institute has a vibrant incubation centre, where several companies jump-started by our undergraduates are being incubated.

The Career Development Services (CDS) at IITGN supports students in all these pursuits, including placement opportunities, international summer internships and industry visits. Students also have the option of deferred placement, designed to enable students to explore alternative career paths, including entrepreneurship, for a year or two and then seek to participate in placements at a later date if needed, thus providing them with a safety net.

Backed by the training and support of the CDS, students at IITGN regularly interact with experts in the industry and IIT alumni to stay abreast of the needs of the job market. Domestic and foreign companies spanning finance, consulting, research & development, education, PSUs, management, IT / Software, in addition to core engineering and technology, participate in placements. Details of the placement and internship procedures along with the top recruiting organizations can be found at: <https://cds.iitgn.ac.in/2225-2/>

Industry And Alumni Relations

Alumni and industry engagement at IITGN is exemplary. Despite a young alumni base, the rate of alumni giving back to the Institute is perhaps the highest among Indian institutes and among the highest in the world, with 50% of the alumni contributing to the Institute during the last four years. Many alumni have started to set up scholarships for future students, and many others are engaged in nurturing current students through interactive sessions. The fully functional research park on campus enables strong relationships with several industry partners. A number of industry-supported projects are carried out at IITGN, thus providing opportunities for students to be engaged in industry-related projects.

Recreational/Extra Curricular activities

The students and faculty of IITGN show an extraordinary level of enthusiasm and participation in Institute affairs. Many festivals and events are celebrated on campus, including:

- Amalthea, the two-day annual technical summit of IITGN, that focuses on spreading technical knowledge and enthusiasm in students to develop technology for the greater good of humans.
- Blithchron, the two-day cultural festival of IITGN, acts as a catalyst for budding talents from various universities, colleges, and institutes from across the country.
- Hallabol is an all-night intra-Institute sports Festival at IITGN, drawing participation from students, staff and faculty.
- Ignite, an Intra Institute fest, brings the entire IIT Gandhinagar family together to celebrate, experience, relive, share and admire the beauty of technology through fun, amusing activities and events.
- Jashn is a three-day fun-filled intra-Institute cultural fest with innovative, traditional, and exciting events/games, including an art exhibition, photography and movie-making competitions, quizzes and dance, drama and musical performances.

IIT Gandhinagar students are active in various sports, supported by exceptional sports facilities on campus and a number of coaches and gym instructors. Several student-run clubs are active on campus, and more information can be found at
<https://www.iitgn.ac.in/student/lifeoncampus/clubs/>

The Institute is strongly committed to sensitizing students to the needs of society and to motivate them to make socially meaningful contributions from an early age. Nyasa is a student-run programme to address the health and education needs of construction workers and their families on campus.

Location and Accessibility

IIT Gandhinagar is located on the banks of the river Sabarmati in Palaj, Gandhinagar. The campus has excellent connectivity to the Sardar Vallabhbhai Patel International Airport Ahmedabad (around 30 minutes by road) and train stations of Ahmedabad and Gandhinagar. The road, water, and electricity infrastructure of the city and of the campus are world-class. Gandhinagar-Ahmedabad twin cities are known both for a rich cultural past as well as state-of-the-art infrastructure, thriving industries, effective transport system, and many modern amenities. They are also the hub of prestigious academic and research institutes, such as the Indian Institute of Management, Ahmedabad (IIM-A) and the National Institute of Design (NID). Ahmedabad consistently ranks among the best and safest cities to live in India in several major national surveys.

A campus shuttle operating on all days at regular intervals facilitates travel between the campus and key locations in Ahmedabad and Gandhinagar. The bus rapid transit system in Ahmedabad is convenient for accessing various points of the city from the end point of the campus shuttle. The construction of a metro rail link between Ahmedabad and Gandhinagar is presently underway.

IIT Gandhinagar

5 languages

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Tools

Coordinates:  23°12'41.12"N 72°40'55.42"E

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This article **relies excessively on references to primary sources**. Please improve this article by adding **secondary or tertiary sources**.

Find sources: "IIT Gandhinagar" – news · newspapers · books · scholar · JSTOR (April 2021) ([Learn how and when to remove this template message](#))



Motto

Students First

Type

Public technical university

Established 2008 (16 years ago)

Chairman Sanjiv Puri

Director Rajat Moona^[1]

Academic staff 128 (2022)^[2]

Students 1,852 (2022)^[2]

Undergraduates 820 (2022)^[2]

Postgraduates 492 (2022)^[2]

Doctoral students 540 (2022)^[2]

Location Gandhinagar, Gujarat, India

 23°12'41.12"N 72°40'55.42"E

Campus Urban, 400 acres (1.6 km²)

Acronym IITGN

Website iitgn.ac.in



Wikimedia | © OpenStreetMap

Indian Institute of Technology Gandhinagar (also known as **IIT Gandhinagar** or **IITGN**) is a public technical university located in [Gandhinagar, Gujarat, India](#). It has been declared to be an [Institute of National Importance](#) by the [Government of India](#).^[3] Established in 2008, IIT Gandhinagar campus is spread over 400 acres of land along the river Sabarmati.^[4]

History[\[edit\]](#)

Foundation[\[edit\]](#)



IIT Gandhinagar Campus

IIT Gandhinagar is one of the eight [Indian Institutes of Technology](#) (IITs) announced by the [Ministry of Human Resource Development](#) in 2008.^{[5][6]} The institute began operating in a temporary campus at Vishwakarma Government Engineering College, Chandkheda, mentored by [Indian Institute of Technology Bombay](#). The first batch of students was admitted to three programmes: Chemical Engineering, Mechanical Engineering, and Electrical Engineering.^[7]

IITGN was included in the Institutes of Technology (Amendment) Act, 2011.^[8] The Act was passed in the [Lok Sabha](#) on 24 March 2011^[9] and by the [Rajya Sabha](#) on 30 April 2012.^[10] The IIT Gandhinagar campus is located on the banks of the [Sabarmati River](#) in Palaj

village.^[11] In 2011, in his inaugural speech at the Amalthea technology summit, then Gujarat Chief Minister Narendra Modi spoke of the land for the new permanent campus, saying, "the state government has decided to give land on 99 year lease with a token amount of just one rupee for setting up a campus of IIT-Gandhinagar."^[12] The institute took possession of over 400 acres of land in August 2012,^[4] and classes and other activities on the new campus began in July 2015.^[13]

The 400-acre campus of IITGN is situated on the banks of the Sabarmati river in Palaj village.^[14] The campus has three rough divisions: Academic Block, Housing Block, and Student Hostels. This campus is India's first 5-star GRIHA LD campus for minimizing the negative effect on the environment. IITGN has also been bestowed with FSSAI's 'Eat Right Campus' with a 5-star rating and is the first (and only) academic campus to be declared so.^{[15][16]}

Departments^[edit]

- Biological Engineering
- Civil Engineering
- Chemical Engineering
- Computer Science and Engineering
- Electrical Engineering
- Mechanical Engineering
- Materials Engineering
- Chemistry
- Mathematics
- Physics
- Cognitive Science
- Earth Sciences
- Humanities and Social Sciences

Centres^[edit]

- Archaeological Sciences
- Biomedical Engineering
- Design and Innovation
- Safety Engineering
- Cognitive and Brain Sciences
- Sustainable Development
- Center for Creative Learning

Indian Institute of Technology Goa

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	At Goa Engineering College Campus, Farmagudi, Ponda- 403401, Goa, India
Contact Person For Admission:	Dr. Amaldev Manuel
Designation:	Chair, JEE Cell, IIT Goa
Email:	admission@iitgoa.ac.in
Alternate Email:	jeeccell@iitgoa.ac.in
Phone Nos:	08322490873,08322490861
Fax No:	#N/A
Mobile No.:	

About the Institute

IIT Goa, a young institute of higher learning, is dedicated to cultivating a comprehensive understanding of the intersection of science, technology, and society, as well as the broader concerns and interests of humanity. Through its unwavering commitment to critical thinking, creativity, interdisciplinary study, and scholarship, the institute strives for excellence in teaching and research. Balancing the academia-industry divide, IIT Goa upholds the integrity, excellence, and initiative for which IITs are renowned. The institute fosters an environment that nurtures both academic and cultural activities, empowering its members to contribute to their fullest potential and explore new horizons.

Currently operating from its temporary campus at Farmagudi, IIT Goa offers undergraduate BTech programs in Computer Science and Engineering (CSE), Electrical Engineering (EE), Mathematics and Computing, and Mechanical Engineering (ME). Furthermore, IIT Goa provides postgraduate MTech programs in CSE, EE, and ME. Research plays a vital role at the institute, with PhD programs offered through its seven Schools: School of Chemical and Material Sciences, School of Electrical Sciences, School of Humanities and Social Sciences, School of Interdisciplinary Life Sciences, School of Mathematics and Computer Science, School of Mechanical Sciences, and School of Physical Sciences. This emphasis on research showcases IIT Goa's commitment to advancing knowledge and pushing the boundaries of various disciplines.

Fee Structure

Sr. No.	Particulars	Slab I	Slab II	Slab III	Slab IV
<i>One Time Fee (At the time of admission - Non-Refundable)</i>					
A1	Admission Fee	1,400.00	1,400.00	1,400.00	1,400.00
A2	Grade Card	300.00	300.00	300.00	300.00
A3	Provisional Certificate	200.00	200.00	200.00	200.00
A4	Medical Examination	200.00	200.00	200.00	200.00
A5	Students Welfare Fund	1,000.00	1,000.00	1,000.00	1,000.00
A6	Modernisation	1,500.00	1,500.00	1,500.00	1,500.00
A7	Identity Card	400.00	400.00	400.00	400.00
	Total	5,000.00	5,000.00	5,000.00	5,000.00

Per Semester Fees (Non-Refundable)

B1	Tuition Fee	0.00	0.00	33,333.00	100,000.00
B2	Examination Fee	500.00	500.00	500.00	500.00
B3	Registration Fee	500.00	500.00	500.00	500.00

B4	Gymkhana Fee	750.00	750.00	750.00	750.00
B5	Hostel Seat Rent	500.00	500.00	500.00	500.00
B6	Electricity & Water Charges	2,500.00	2,500.00	2,500.00	2,500.00
B7	Medical Fee	1,000.00	1,000.00	1,000.00	1,000.00
B8	Student Benevolent Fund	1,000.00	1,000.00	1,000.00	1,000.00
B9	Hostel Establishment Charges	2,000.00	2,000.00	2,000.00	2,000.00
B10	Contribution for Hostel Subsidy	6,000.00	6,000.00	6,000.00	6,000.00
Total		14,750.00	14,750.00	48,083.00	114,750.00

Security Deposits (At the time of Admission - Refundable)

C1	Institute Security Deposit	1,000.00	1,000.00	1,000.00	1,000.00
C2	Library Security Deposit	1,000.00	1,000.00	1,000.00	1,000.00
C3	Mess Security Deposit	1,000.00	1,000.00	1,000.00	1,000.00
C4	Mess Advance	2,000.00	2,000.00	2,000.00	2,000.00
Total		5,000.00	5,000.00	5,000.00	5,000.00

Medical Insurance (Payable during the Autumn Semester - Non-Refundable)

D1	Annual Insurance Premium	1,300.00	1,300.00	1,300.00	1,300.00
	Total	1,300.00	1,300.00	1,300.00	1,300.00
	Grand Total (A+B+C+D)	26,050.00	26,050.00	59,383.00	126,050.00

Please Note :

1. All the SC/ST/PwD students are exempted from payment of Tuition Fee
2. Students are categorised into different slabs based on their birth category/disability and annual family income, as detailed below
 1. Slab I - Applicable to students belonging to SC/ST/PwD
 2. Slab II - Applicable to students belonging to GEN/EWS/OBC, whose parental income for the previous financial year is less than Rs. 1,00,000/-
 3. Slab III - Applicable to students belonging to GEN/EWS/OBC, whose parental income for the previous financial year is between Rs. 1,00,000/- and Rs. 5,00,000/-
 4. Slab IV - Applicable to students belonging to GEN/EWS/OBC, whose parental income for the previous financial year is greater than Rs. 5,00,000/-
3. Institute has two semesters in a year, i.e. Autumn & Spring
4. In addition to the above, every student must pay a full semester mess advance of Rs. 16,500.00 (every semester). The semester mess Charges are based on rates during the respective semester. Any change in charges may be applicable.
5. IIT Goa reserves the right to revise the fee structure in subsequent semesters

Academic Structure

The Institute offers four undergraduate (B. Tech) programs in engineering and follows a semester system. An academic year (July-April) consists of the Autumn and Spring semesters. Each semester is approximately 16 weeks. The first semester begins in the last week of July and ends in the last week of November. The second semester starts in the first week of January and ends in the last week of April. In each of the first year's two semesters, a student must register for the relevant courses listed in the curriculum for that semester.

The Institute follows a credit system. Credits are allotted to various courses depending on the number of lectures, tutorials and laboratory hours per week. The student's performance in a course is continuously evaluated throughout the semester through a mid-semester examination, quizzes and culminates in the award of a Grade on a 10-point scale. Performance in a semester is evaluated in terms of the weighted average of grade points secured in all the courses registered in that semester, which is known as the Semester Performance Index (SPI). A Cumulative Performance Index (CPI) is the weighted average of the grade points obtained in all the courses registered by the student since the time of joining the Institute.

A B.Tech program consists of eight semesters spread over four years. During the first semester, all branches will have a common curriculum. The undergraduate programs offered by IIT Goa are as follows,

Duration	Programme	Total Seats
4 Years	B. Tech in Computer Science and Engineering	40
4 Years	B. Tech in Electrical Engineering	43
4 Years	B. Tech in Mechanical Engineering	45
4 Years	B. Tech in Mathematics and Computing	29

Rules For Change Branch

Introduction

Students admitted to undergraduate programs at the Indian Institute of Technology Goa (IIT Goa) are allowed to change their branch after completing their first two semesters of the academic program.

Seats Available for Branch Change

Three types of seats are available to students for branch change, namely

Additional seats – Additional seats are the seats additionally created in a branch to effect the branch change. These are limited to a maximum of 10% of the sanctioned strength of each branch, more precisely $LS*10/100$, where S is the sanctioned strength of the branch. These seats are of category Open.

Vacant seats – Vacant seats are

(i) The seats that remain vacant after the completion of the admission procedures at the beginning of the academic program.

(ii) The seats vacated by the students who have withdrawn from programs during the first semester and whose withdrawals have been approved by the Senate of IIT Goa.

The seats vacated by the students in the preparatory program are not considered as Vacant seats for the purpose of branch change.

Vacant seats for re-allocation – A Vacant seat for re-allocation is a seat vacated by a student in a branch when the student is allocated a branch change to a different branch.

Categories of Seats

Both the vacant seats and vacant seats for re-allocation preserve the categories assigned to them in the seat matrix. These categories are,

1. Open
2. Open-PwD
3. Gen-EWS
4. Gen-EWS-PwD
5. SC
6. SC-PwD
7. ST
8. ST-PwD
9. OBC-NCL
10. OBC-NCL-PwD

A Vacant seat (2.2) of a reserved category is allotted only to students of the respective category.

When a student in Branch A vacates a seat of category X on account of branch change, it creates a Vacant seat for re-allocation in Branch A of category X.

A Vacant seat for re-allocation in a reserved category is available only to students of the respective category.

Eligibility Requirements

To be eligible for branch change, a student must satisfy the following criteria.

1. The student must have completed all the prescribed course credits of the first two semesters.
2. The student shall not have any backlog at the end of the first year.
3. The students of Open, Gen-EWS and OBC-NCL categories should possess an SPI (Semester Performance Index) of at least 8.00 in the second-semester. Students of SC, ST and PwD (Divyang) should have an SPI of at least 7.00 in the second semester.
4. The student should not have been found guilty of any academic misconduct.

Mere fulfilment of eligibility criteria does not guarantee a branch change.

Guidelines

1. The branch change will be performed before the start of the third semester of the undergraduate program.
2. The allocation list will be prepared in the order of SPI of the second semester.
3. Any tie in the allocation list will be broken using the first-semester SPI.
4. A student's request for a change to Branch B will be considered if the following criteria are met.
 1. The student meets the criteria outlined in (4.1).
 2. There is a seat available in Branch B that the student is eligible for.
 3. The strength in Branch A, from which a change is being sought, does not fall below its sanctioned strength by more than 30%.

4. If a student is not allocated an available seat of category C in Branch B on account of (5.4.3), then no other eligible student from any branch lower in the allocation list is allotted that seat.

For Illustrations, FAQs and detailed guidelines, please visit [Branch Change - Rules and Regulations](#).

Facilities

Hostel and sports facilities

IIT Goa has commissioned a brand new Hostel block with a capacity to house 640 students and the rooms are spacious with common toilets and include a large dining hall with a onetime seating capacity of 200 students access to internet and recreational facilities like indoor lawn tennis and basketball the court, a Gymnasium for the students, the hostel at IIT Goa is on par with the best available in any other IIT. IIT Goa has also a tie-up with SAI (Sports Authority of India) for utilization of their swimming pool at Ponda. The hostel block is just 200 meters away from the academic building.

Medical facilities

The campus is served by local hospitals and visiting doctors. The students, faculty, and staff of IIT Goa has access to the general medical facilities available in the assigned local hospitals, Manipal Hospital, Goa provides super specialty services to the students of IIT Goa.

Student Life at Institute

IIT Goa offers a vibrant and enriching student life experience, and it is characterised by a perfect balance of academic rigour, extracurricular engagement, and a thriving community.

Meaningful faculty-student interaction is a priority at IIT Goa. Through regular discussions in and outside classrooms and collaborative projects, faculty members at IIT Goa actively engage students in thought-provoking discussions, thus encouraging critical thinking and intellectual curiosity. The faculty's commitment to student development extends beyond academics, as they serve as mentors, guiding students in their career choices and personal growth.

Extracurricular activities play an equally vital role in shaping the overall student experience at IIT Goa. The institute recognises the importance of holistic development and provides ample opportunities for students to pursue their interests outside the classroom. Students are encouraged to explore their passions, develop new skills, and showcase their talents. Whether it's participating in sports, cultural events, technical competitions, or joining student clubs and societies, there is something for everyone! Annual traditions such as *CultRang* (the techno-cultural fest), *Cepheus* (the technical fest), *Aafaaab* (the literary fest) and *Chakravuyah* (intra-IIT sports) not only serve as platforms for students to display their talents and compete with their peers from other institutions but also add to the unique tapestry of student life at IIT Goa.

The student community at IIT Goa has established a thriving and exciting hostel culture. The environment is upbeat and very supportive, ensuring a strong sense of community and belonging. Needless to say, the students are at home on campus.

In essence, studying at IIT Goa can be a truly transformative experience. By prioritising student interaction and creating an inclusive and supportive environment, IIT Goa ensures that students are equipped to face personal and professional life head-on.

Training & Placement

Despite the challenging circumstances due to the global recession, the Career Development Cell(CDC) has been successful in maintaining a comparable placement record to the previous year for the batches of 2019 and 2020.

For the B.Tech and M.Tech students, the CDC has achieved a placement rate of 97.6% so far. Among the 105 registered B.Tech students, 104 received placement offers, with an average package of 17.19 LPA (Lakhs Per Annum). In the case of M.Tech students, 18 out of the 20 registered students were placed with an average package of 10.68 LPA. The highest package offered was 60 Lakhs.

A total of 126 companies participated in the placement process for the academic year 2022-23. These companies offered job opportunities across various domains, such as Software Engineering, Product Management, Research & Development, and Research Engineering, among others. Consultancy and analytics roles were also available. Some of the top companies that offered full-time jobs included Media.Net, Amazon, Trilogy Innovation (Codena), Paytm, ARM, Siemens, Mathworks, Mentor Graphics, Texas Instruments, AMD, Google, Intuit, Adobe, ICICI Securities, HDFC Bank, GE Aerospace, Wabtec Corporation, and Oyo Rooms. Additionally, six students secured international job offers from companies like Accenture Japan, Willings, and Linkstaff.

Despite the challenges posed by the global recession, the Career Development Cell of IIT Goa has effectively supported students in securing placements and internships, showcasing their resilience and dedication to student career development.

Please visit [Career Development Cell, IIT Goa](#), for more information.

Location and Accessibility

IIT Goa

5 languages

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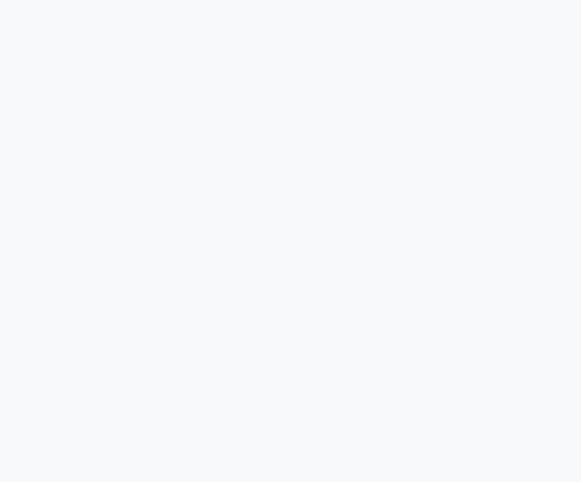
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Tools

Coordinates:  15.423°N 73.980°E

From Wikipedia, the free encyclopedia



विद्या विनयेन दीप्यते (Sanskrit)

Knowledge shines with
humility

Public

30 July 2016 (7 years ago)

K Sanjay Murthy^[1]

B K Mishra^[2]

157^[3]

Farmagudi, Goa, India

 15.423°N 73.980°E

www.iitgoa.ac.in

Indian Institute of Technology Goa (IIT Goa) is an autonomous public university located in [Goa](#). Ever since an IIT was allotted to Goa by the Central government in 2014, the new Indian Institute of Technology (IIT) at Goa started functioning from July, 2016 in a temporary campus housed at [Goa Engineering College](#) (GEC). The campus is located at [Farmagudi, Goa](#).^{[4][5]} Currently, it offers BTech, MTech and PhD courses in various core and one non-core branches majorly in [Electrical Engineering](#), [Computer Science and Engineering](#), [Mechanical Engineering](#) and Mathematics and Computing.

As part of the mentorship plan, IIT-Bombay was the mentor for IIT-Goa for three pioneer years. The HRD Ministry had set up an IIT monitoring cell at IIT-Bombay and the committee members had been designated as officials on special duty to supervise the process of setting up IIT-Goa.^[6]

Campus^[edit]

The campus is located at Farmagudi, Ponda approximately 29 km southeast of Panaji, the capital of Goa and it is a temporary campus. The state of Goa is well connected by road ways, rail ways and air ways with various parts of the country. At present IIT Goa is temporarily accommodated and functioning in the [Goa Engineering College](#) (GEC) Campus located at [Farmagudi, Goa](#). Goa Government had identified land for permanent campus in Guleli village panchayat in North Goa's Sattari sub district, measures approximately 320 acres, has been approved by Union ministry of human resources development (HRD).^[7] The MHRD expects that the IIT Goa will function from the temporary campus for just the initial three years and is expected to move to its permanent facility by the fourth year.^{[8][9]}

In May 2020, four years after IIT Goa started running, Goa Chief Minister Pramod Sawant handed over the documents of transfer of land (admeasuring 10 lakh square meters) in Melauli, Sattari, to the Director of IIT Goa, Prof. B.K. Mishra. This was far from the first site on which the government was trying to build the IIT Goa campus. Prior to this, sites at Canacona and Sanguem were identified, but plans to set up the campus in these places were scrapped after resistance and opposition from local residents in both these areas.^[10]

However, protests by residents over the Melauli site which had started in February 2020, continued in the following months. In August 2020, the residents of Melauli organized a particularly unique protest, tying rakhis to the trees that the government had marked for felling for the proposed IIT Goa project. Reasons for opposing the project is that the site is a forest area. Located at the foothills of the Western Ghats, the land is covered with cashew trees that the villagers claim, have sustained them for generations. As such, they have been demanding that the government find an alternative site for the IIT campus, which will not cause as much loss to the environment. [11]

Organisation and administration[\[edit\]](#)

Departments, Centers and Schools[\[edit\]](#)

In the first 3 years of its existence, IIT Goa offered 30 seats each in B. Tech. in the streams of Computer Science and Engineering, Electrical Engineering and Mechanical Engineering. Classes began on July 15 2016, along with the other IITs across the country. IIT Goa now offers 150 seats in B. Tech. in Computer Science and Engineering, Electrical Engineering, Mechanical Engineering and Mathematics and Computing. Apart from these, it also offers some seats each in M. Tech. in the same streams and some in Doctorate as well.

Academics[\[edit\]](#)

[12]

Student life[\[edit\]](#)

Cultural, Technical and non-academic activities[\[edit\]](#)

IIT Goa students have developed clubs for following hobbies and passions like Photography Club, Designing Club, Oratory Club, Literature Club, Dramatics Club, Fine Arts Club, Music Club, Dance Club and a College Band.

Also, IIT Goa has developed clubs for technical activities for hobbies like Programming Club, Economic Club, and Robotics Club. IIT Goa has also teams dedicated to national Formula Student Competitions, and a team dedicated to national robotics competitions.

As of now, IIT Goa doesn't have a permanent campus, but they organised their first inter-college Techno-Cultural Fest "Cultrang" in 2020 in their temporary campus. But they did not organize an Inter-Sports Fest yet. Also, the students actively participate in events hosted by other colleges like in WAVES organized by [BITS GOA](#), Saavyas by NIT Goa, Happenings and Spectrum by [GEC](#), Mood Indigo by IIT Bombay etc.

In sports events, IIT GOA participates regularly in events like [Inter IIT Sports Meet](#), Aavhan by [IIT Bombay](#), Spree by BITS GOA and more.

There are many Intra-College events organized by the students, a sports dedicated intra-college fest named "Chakravyuh" and a sports-cultural intra college fest named Flock in the nascent years of the institution.

Indian Institute of Technology Guwahati

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	Guwahati - 781039, Assam, India
Contact Person For Admission:	Dr. Subhajit Choudhury
Designation:	Assistant Registrar & HoS (Academic Affairs)
Email:	acad_admission@iitg.ac.in
Alternate Email:	hosacad@iitg.ac.in
Phone Nos:	91-361-2582192
Fax No:	91-361-2582090
Mobile No.:	

About the Institute

Indian Institute of Technology Guwahati (IITG) is the sixth IIT established in 1994 and has completed 27 years of its glorious existence. In the last 27 years, IITG has placed itself in the global academic map by dint of untiring efforts of the quality faculty members, staff and outstanding students. IIT Guwahati is the only academic institution in India that occupied a place among the top 100 world universities – under 50 years of age – ranked by the London-based Times Higher Education (THE) in the year 2014 and continues to maintain its superior position.

even today in various International Rankings. IIT Guwahati has achieved 37th global rank in research citation per faculty along with 384th position in overall world ranking in the QS World University ranking 2023. IIT Guwahati has retained the 7th rank in 'Engineering' and 8th rank in the 'Overall' category for this year (2022), declared by National Institutional Ranking Framework (NIRF) of the Union Ministry of Education.

Situated in Guwahati (a modern and safe city) on the north bank of the river Brahmaputra, the well planned campus of IITG is spread over 700 acres having woods, hills (home for different birds and animals) and lakes inside. The lakes are winter home for a wide range of migratory birds. This along with other infrastructural facilities (laboratories, sports facilities, clubs, hostels, computer centre, library, etc.) provides the right ambience for pursuing studies and other social and extra-curricular activities. Guwahati being the gateway to the north-east India, students can explore the natural beauty and rich and diverse cultures of all the north-eastern states. It prides itself on being probably the most scenic academic campus in India.

Guwahati Railway Station (22 km) and International Airport (23 km) can be reached from IIT Guwahati by bus, taxi and auto services within 30 minutes. Institute buses ply to and from the city centre at regular intervals. Guwahati is well connected by trains and flights to the rest of India. Weather at Guwahati remains pleasant for most part of the year with maximum and minimum temperatures of around 37°C (summer) and 7°C (winter) respectively with a fair amount of rainfall.

The Institute offers BTech in 12 disciplines along with a BDes programme, MS(R) in a few centres and schools, MTech in all engineering specializations, MDes in Design Department, Dual degree [MTech+PhD and MS(Engg.)+PhD] in some departments and PhD in all departments, centres and schools. IITG also offers two year MSc (in Physics, Chemistry and Mathematics departments) and a two-year MA (Developmental Studies and Liberal Arts) programmes. Current student strength of the Institute is about 8,000 (including international students) and 33% of them are PhD students. BTech students can enroll for minor specializations in a discipline other than his/her own to extend his knowledge base to another area of interest.

IIT Guwahati nurtures and promotes academic excellence by way of excellent teaching and research exposures. With 435 quality faculty members, large classes are sometimes split into multiple sections making teaching-learning atmosphere more interactive and personal. Many faculty members work closely with industries/research laboratories and keep students abreast of the latest developments, thus promoting innovations and research among under graduate (UG) students. IITG has the culture of senior students mentoring junior students thus facilitating a seamless integration of new students into the system. Students may also avail exchange programmes IITG has with number of leading Institutes across the globe. The flexible and balanced course curriculum at IITG imparts graduates the confidence and competence to take up challenging assignments. The placement statistics and alumni of IITG bear testimony to this fact.

For details please visit: <https://www.iitg.ac.in/>

Fee Structure

For New PREPARATORY / B. Tech students for July-Nov 2022 Semester (First Semester)

A	One-Time Fees (At the Time of Admission) & Non-Refundable	A m ou nt in Ru pe es
A	Admission Fee	15 00 1
A	Certificates Fee (Grade Cards + Degree Certificate)	75 0 2
A	Medical Examination Fee	10 0 3
A	Student Welfare Fund	20 0 4
A	Identity Card Fee	10 0 5
A	Modernization and Upgradation Fee	10 00 6
A	One-time Alumni Fee	15 00 7

A	Hostel Admission Fee*	40 0
.		
8		
A	Mess Establishment Charge*	25 00
.		
9		
	Total	80 50
B	One-Time Deposits (At the Time of Admission) & Refundable	
.		
B	Institute Caution Money	10 00
.		
1		
B	Library Caution Money	10 00
.		
2		
B	Hostel Caution Money*	40 00
.		
3		
B	Mess Deposit*	60 00
.		
4		
	Total	12 00 0
C	Payable at Every Semester	
.		

C	Tuition Fee (for all Non-PWD Students belonging to General or OBC-NCL category and whose Parents' Annual Income is above five lakhs) #	10 00 00
C	Registration / Enrolment Fee	10 00
C	Examination Fee	50 0
C	Academic Facilities Fee	25 00
C	Students' Brotherhood Fund	50
C	Students' Travel Assistance Fund	50
C	Gymkhana Fee	10 00
C	Hostel Fund*	60 0
C	Hostel Rent*	10 00

C	Hostel Maintenance Charge*	30 00 1 0
C	Electricity and Water Charges*	25 00 1 1
C	Adjustable Mess Advance*	18 00 1 2
	Total	13 02 00
D	Payable at the time of Admission and in Every July-November Semester	
D	Medical Fee	19 00 1
	Total	19 00
	GRAND TOTAL	15 21 50

* These fees are applicable only to Hostellers.

For SC / ST / PwD Students, there is NO Tuition Fee. For Most Economically Backward Students

whose Parents' annual income is below 1 lakh, the Tuition Fee is fully waived. For Other Economically Backward Students whose Parents' annual income is between 1 lakh and 5 lakhs, the two-third of Tuition Fee is waived.

Total Fees (in Rupees) Payable At the Time of Admission for Indian Nationals

SC/ ST/ PwD Students	52 15 0
Most Economically Backward Students whose Parents' Annual Income (in the last FY) is below One Lakh	52 15 0
Other Economically Backward Students whose Parents' Annual Income (in the last FY) is between One Lakh and Five Lakhs	85 48 3
All Other Students	15 21 50

Total Fees Payable At the Time of Admission

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Rules For Change Branch

The Institute has one of the most liberal branch change schemes among all the IITs. Students are allowed to change from one branch of study to another within the institute after the end of their second semester. This is subject to certain conditions. Complete details are available in the B.Tech ordinance of the Institute. The most important ones are -

1. Any BTech student who has completed all the courses of the first two semesters, without failing in any course and without passing any course through supplementary examination, is eligible to apply for branch change within B.Tech programs of IIT Guwahati. There is no CPI restriction for making this application.
2. Change of branch is permitted based on merit (i.e., CPI at the end of first two semesters) but is subject to the limitation that the strength of a branch must not fall below its existing strength by more than ten percent and must not go above its approved total strength/ intake by more than ten percent.

Faculty

Faculty members and students play a key role in the development of the Institute into a world-class Institute which caters to contemporary research needs of the nation through its teaching as well as research programs. Presently, IIT Guwahati has 436 full-time faculty members and 6500 students (including international students). The research activities of the Institute are mainly those which are (a) of strategic importance to the nation, (b) catering to the needs of large/medium/small industries in the country, (c) catering to the needs of the rural sector by dissemination of technology and training of the rural people, and (d) academic research, including training students in research methodology. The R&D wing is committed to provide all necessary help to the Institute to achieve the highest level of scientific and technological standards.

The R&D section of IITG is actively involved in bringing together national and international industry professionals and the faculty of the institute for gaining insight and solving challenging problems through consultancy and/or funding projects. Students are also involved in these projects enthusiastically. Our students are also encouraged to start-up their own company with the help of some mentor faculty under IITG - Technology Incubation Centre. IITG Research Park is one of the important ventures to initiate the R&D activities of the incubated companies.

The Institute currently has 301 active sponsored research projects with a total funding of approximately Rs 340 crores.

Industrial Interactions and Special Initiatives (II&SI)

1. Industrial Interactions and Special Initiatives (II&SI) office presently has 24 active Sponsored projects with a sanctioned amount of ₹140.13.33 crore. In addition, during 2022-23, 79 Consultancy projects have been received till now.
2. IIT Guwahati students get an opportunity to work on industrial problems as interns during regular semester at IIT Guwahati Research Park.
3. 32 numbers of MoU/MoA with different parties (Industry and Govt. Agency etc.) have been signed till date.

Facilities

Facilities Unique to the Institute :

State-of-the-art teaching laboratories in all the engineering and science disciplines, combined with a Central Workshop and a Computer & Communication Centre, are available to the students of all the programmes offered in IIT Guwahati.

The Computer & Communication Centre with its modern facilities and pleasant atmosphere is a favourite place for students to work even though these facilities also provide access from anywhere inside the campus through the campus local area network (LAN) and campus-wide WiFi. Apart from providing PCs for students, the centre also houses servers for the institute and has a PARAM supercomputing cluster facility. The centre also provides free Internet access to all users through the institute's broadband lines and proxy servers. This is available for access to all campus residents through the campus LAN.

The Central Instruments Facility (CIF) of IIT Guwahati houses a large number of very high-end scientific instruments (like NMR Spectrometers, EPR Spectrometer, Scanning Electron Microscopes, Vibrating Sample Magnetometer, X-Ray Spectrometer, Transmission Electron Microscope and Mass Spectrometers) for use by all faculty, students and research staff.

The Central Library has an excellent collection of books, current periodicals and back volumes of journals along with subscription to most online repositories for journals and some e-book collections. Campus residents can access these facilities through the campus LAN. System of automatic borrowing, renewal and return of books is in place. The library provides a comfortable zone for students to study especially during examinations and remains open until late at night on all days. A coffee shop located nearby also stays open so that students can take a break during their studies or have relaxed discussions over a cup of coffee.

The Institute has also established a Technology Incubation Centre (TIC) to promote innovation and support students to translate their innovative ideas into commercially significant products by assisting them with finance, space and technical guidance. Faculty members are also available to provide consultation to interested students in establishing their own entrepreneurial ventures and technology-based start-ups.

Boarding and Lodging:

There are eleven boys' hostels and two girls' hostels for accommodating students. Each of these hostels has its own mess, canteen, stationary shop, indoor games facilities, music rooms, library, TV room among many other facilities with uninterrupted power supply. High speed LAN connections are provided in every room.

The Institute also has two large Guest Houses for accommodating visitors. Parents of students who want to visit the campus can request accommodation in the Institute Guest Houses during their visit subject to availability of rooms. In addition, there are a large number of apartments, for married students. Residential quarters are also provided in campus for all faculty and staff. This helps to promote strong linkages and healthy interaction between students, staff and faculty in the social, cultural and educational events organized on campus.

The campus has an academic complex, an administrative building, a library cum Computer & Communication Centre building, a lecture theatre complex, a classroom complex, a large auditorium with state of the art sound system, a smaller mini-auditorium and a conference complex. Classes are held in the lecture theaters or in smaller classrooms distributed around the academic complex. Instructional laboratories are available in the individual departments. A large six-storied classroom complex with all modern amenities has been added recently.

Canara Bank, ICICI Bank and State Bank of India have their branches on campus with a number of ATMs. The campus also has its own post office, a computerized railway Passenger Reservation System (PRS) counter, Travel Agency, Book shops, Stationery and photocopy shop, Food court, and a Shopping complex to serve the needs of all campus residents.

E-Rickshaws operate within the campus to help the campus residents to travel conveniently inside the campus in addition to campus shuttle trip bus facility. A set of free cycles christened as green cycles is available at specified places for any residents to borrow it to ride within campus. There are buses plying to and from the campus and other parts of Guwahati city every hour so that one can commute as per their convenience. The first bus starts from campus at 8 am and the last bus returns from Guwahati city at 8.55 pm.

Health Care:

The Institute gives great importance to health care. There are five regular Medical Officers besides a number of contractual specialists. The Institute has a sixteen-bed hospital with trained nurses on duty round-the-clock and a Medical Officer available on call. The hospital provides free outdoor medical care to all campus residents and has modern diagnostic equipment, a pathological laboratory, a pharmacy, and several ambulances. For serious patients requiring higher levels of care, the Institute also has arrangements with some of the top medical institutions of Guwahati, such as Guwahati Neurological Research Centre (GNRC), Narayana Hridayalaya Guwahati, International Hospital, Down Town Hospital, Guwahati Medical College Hospital, etc. All students are also covered under a Group Medical Insurance Scheme (GMIS) arranged by the Institute.

Students Activity Courses (including sports, performing arts, community service, NCC), as non-credit but compulsory courses for four semesters in the undergraduate programme, are offered to all the students to keep them mentally and physically sound.

The Institute also has a Counseling Cell consisting of four full time Counsellors, who provide one to one counseling to support students as well as other campus residents in various mental and wellbeing issues.

Student Life at Institute

With the majestic Brahmaputra River on one side and with the hills and lakes surrounding IIT Guwahati along with the magnificent architecture, it is one of the most picturesque campuses in India. Students can easily take a break from their hectic academic schedule and enjoy the beauty of nature within the campus.

In order to promote the overall development of life skills, students in the Institute participate in a host of extra-curricular activities, ranging from sports and outdoor activities to cultural, social and technical activities of various kinds organized under the aegis of the Students' Gymkhana at the level of Institute, Department or Hostels.

The centrally air conditioned Student's Activity Centre (SAC) is a vibrant place in IITG campus which houses various student bodies such as the Drama Society, the Poetry Society and the Film Society that engage in various creative activities and their rehearsals. Students are encouraged to participate in sports and outdoor activities along with the technical and cultural activities promoted by the large number of student clubs under the Students' Gymkhana.

The Institute is well equipped with training infrastructure for almost all major outdoor and indoor games with professional coaches and visiting experts available to guide students all year-round in these sporting activities. Selected students also take part in the Inter-IIT sports meet which is held in December every year. Inter-IIT sports meet 2018 was held at IIT Guwahati. Artificial lights allow sports activities to continue even after dark. IITG students have exemplary records in these events and in several national level sports competitions.

Dedicated to promoting co-curricular activities are the 30+ active clubs of IIT Guwahati that provide stimuli towards growth and experience in cultural, technical, sports and entrepreneurship. The sheer varieties of clubs (ranging from dance, dramatics, music and movies etc in cultural to aeromodelling, astronomy, coding, electronics, entrepreneurial development, robotics, automobiles, quizzing, finance and economics etc.) lead to the well-rounded, versatile and passionate persona that one sees in all IITG students. IIT Guwahati also has its own radio station, RadioG, run by the students, which broadcasts on the network and is available through YouTube as well.

Alcheringa, the Annual Cultural Festival of IITG, is one of the largest cultural festivals of North-East India. Techniche, IITG's Annual Techno-Management Festival, is now one of the largest Techno-management Festivals of the country. The Entrepreneurial Development Cell

organizes Udgam, the annual Entrepreneurial Summit of IITG, bringing together an experience of workshops, lectures and showcases for promising entrepreneurs and start-ups in India, promoting a culture of innovation and problem solving. All these three events are run and managed by the students where they learn communication, crowd and risk management and leadership skills.

National Service Scheme (NSS), IIT Guwahati, tries to improve the living standards of the society at large through regular donation drives, cleanliness drives and by taking up teaching projects at various locations outside the campus.

Students' Academic Board (SAB), IIT Guwahati, is a student forum to redress the academic problems and concerns of the student community of IIT Guwahati. It is a bridge between the students and the academic administration redirecting the academic issues of the students to the appropriate administrative authority. It conducts Peer Assisted Learning (PAL) classes for UG students who need help in academics.

Centre for Career Development (CCD) of the Institute is well equipped with excellent infrastructure to handle all aspects of campus placements and internship for the students by arranging Pre-Placement Talks, Written Tests, Group Discussions, and Interviews etc. as per the requirements of the recruiters.

Students' Alumni Interaction Linkage (SAIL) is a voluntary cell of IIT Guwahati, which acts as an engaging and a mutually beneficial link between IIT Guwahati and its Alumni.

For details please visit: <http://www.iitg.ac.in/stud/gymkhana/index.html>

Financial Assistance

Financial Assistance:

IIT Guwahati awards the following scholarships to its under-graduate/post-graduate students to promote and recognize academic excellence, and overall growth and development of meritorious students and students with low parental income.

Institute Merit Scholarship (IMS) is available for BTech/BDes/MSc/MA students of the Institute, which is meant for the year-wise class toppers of all the streams and is awarded from the second year onward.

Institute Merit-cum-Means (McM) Scholarships is awarded to BTech/BDes/MSc/MA students of the institute strictly on merit-cum-means basis to up to 25% of non-SC/ST students.

SC-ST Scholarships is awarded to all BTech/BDes/MSc/MA students of SC/ST categories with specified income level.

Student Travel Assistance Fund (STAF) is intended to help meritorious students attend and make presentations in national/international conferences, workshops, symposia, scientific meetings etc.

Student Contingency Fund (SCF) offers financial assistance to students who encounter unexpected difficulties during the tenure of their study in IIT Guwahati, such as a serious accident, illness, calamity in family etc.

Student Childcare Assistance Fund scheme is for married student parents who find it difficult to finance their child/children for their education and may apply for assistance under.

Students' Brotherhood Fund (SBF) provides fund as "Loans of Honour" (interest free but to be refunded) to the deserving student applicants to meet their own educational/medical expenses.

Director of the Institute can have assigned prerogative to award Special Scholarship to maximum 5 students every year on genuine means basis. While it is possible to award all 5 scholarships in a year in deserving cases, it may also not be awarded if there is no such case.

If ordinance or rules of the Institute permit, the Institute allows students to avail scholarships awarded by external Govt/non-Govt. organizations (such as central sector scholarship schemes, scholarships from state Govts., scholarships from private trusts, etc.).

Assistantships are also provided to most of the students admitted for the MTech and PhD programmes.

Training & Placement

The placement scenario at IIT Guwahati for 2021-22 has been record-breaking. A total of 180 companies/organizations from various categories [Private, MNC (Indian origin and foreign origin), Govt., PSU, NGO, etc.] and sectors (Such as IT, R&D, Core Engineering, Consulting, Analytics, Finance, Oil & Gas, Conglomerate, Education Management, Health care, etc.) have participated in the recruitment process. The overall placement of B. Tech and B. Des students has been almost 89.14%. To date, 583 jobs [including Pre-Placement Offer(PPO)] have been offered to 654 students registered from B. Tech and B. Des. Companies from various sectors also participated in internship hiring for pre-final year students. The total number of internships offers in 2021-22 was 340.

Additional information:

1. For the placement session 2022-23, based on internship hiring 2021-22, 73 students have got PPO (who will be graduating June 2023) by the recruiters so far.
2. IIT Guwahati has started Academic Placements for interested students and where CCD organizes interactive sessions with foreign representatives with discussion on opportunities and application process for students interested in higher studies.
3. IID, IIT Guwahati has initiated Long Term Association Collaborative Thesis work of regular PG students with external organization
4. IIT Guwahati has started the Internship program during the regular semester in companies associated with IITG Research Park
5. IIT Guwahati has started Career counseling for IIT Guwahati students preparing for the Indian Administrative/Engineering services examination in terms of preparation strategy with a primary objective to help interested students to guidance in terms of subject selection, time and stress management.

Industry And Alumni Relations

Start-ups from IIT Guwahati and its Alumni

The Institute now has 16,000+ alumni who are well settled and well established in different parts of the world facilitating networking of IITG with established professionals and experts. The culture of start-ups and entrepreneurial ventures driven by our alumni are making headlines across the country. Our alumni are now involved in setting up around 100+ start-ups in different cities of the country.

A good number of industry start-ups founded or co-founded by IIT Guwahati alumni did visit the campus for scouting talent and to introduce their firms and seeking recruits for internships. Further, the Institute is now actively engaging established alumni for alumni mentorship sessions and guidance for current students.

International Relations

IIT Guwahati has seen a remarkable increase in the number of foreign students applying to and being selected to pursue their masters and PhD programmes. IIT Guwahati has students exchange programme with large number of Universities from across the globe and as a result there are a good number of full-time and exchange students from Canada, Egypt, France, Denmark, Nigeria, Ethiopia, Uganda, Ghana, China, Botswana, Israel, Bangladesh, Nepal, Myanmar, Iran, Mongolia, Spain, Sweden, South Korea, Japan, UK, and USA. For student exchanges and collaborative research IIT Guwahati has established MoU with 130+ national and international institutes of repute and is a member of various international networks such as the Asia Technological University Network and the European Union's Heritage Network. This has resulted in a large number of our students visiting various institutes in Germany, France, UK, Sweden, USA, China, Japan, Taiwan, Korea and Singapore.

Recreational/Extra Curricular activities

Recreational/Cultural Activities:

In spite of their busy academic schedule, students at IITG are encouraged to participate in the various recreational and cultural activities that are organized, both by the Institute and by the Students' Gymkhana. Apart from the major annual festivals Alcheringa, Technique and Udgam organized by the students at the institute level, various student bodies and the student hostels also organize smaller festivals and cultural events of their own throughout the year. Apart from the students themselves, the rest of the campus community (faculty, staff and their families) also takes part in these events which also see participation from the surrounding community as well.

The Institute regularly invites experts and well known persona from a wide range of technical, scientific and cultural specializations to visit IITG, give lectures and expositions in their respective areas and interact directly with the students to develop their interests in these areas. Apart from a very successful Institute Lecture Series, SPIC-MACAY events, programmes on dance, music and drama are also organized, some with the help of international organizations like the British Council and the Japan Foundation.

Location and Accessibility

IIT Guwahati is situated on the north bank of Brahmaputra and is 22 km from the Guwahati city centre. It can be easily reached by Air and Rail from any other part of the country.

Arrival by Air: Guwahati International Airport is well connected to most of the major cities of the country by a large number of flights. IIT Guwahati campus is 23 km from the airport and can be reached by taxi in 25-30 minutes.

Arrival by Train: Guwahati Railway station is well connected to other cities and towns of the country by a large number of trains. IIT Guwahati campus is 22 km from the Guwahati Railway station and can be reached by taxi/auto/bus within 30 minutes. IITG campus can also be reached by IITG Buses that ply from the city centre (near railway station) at a regular interval of one hour.

The Indian Institute of Technology Guwahati (IIT Guwahati) is a [public technical university](#) established by the [Government of India](#), located in Amingaon area, North [Guwahati Village](#) area, in the state of [Assam](#) in [India](#). It is the sixth [Indian Institute of Technology](#) established in India. IIT Guwahati is officially recognised as an [Institute of National Importance](#) by the government of India. ^{[5][6]} IIT Guwahati has been ranked 7th in Engineering and 9th in Overall category in [NIRF Rankings](#) 2023.

History[edit]

The history of IIT Guwahati traces its roots to the 1985 [Assam Accord](#)^[7] signed between the [All Assam Students Union](#) and the [Government of India](#), which mentions the general improvement in education facilities in Assam and specifically the setting up of an IIT.

IIT Guwahati was established in 1994 by an act of parliament and its academic programme commenced in 1995.^[1] IIT Guwahati admitted its first batch of students into its Bachelor of Technology programme in 1995. The selection process was the same as that of the other IITs, i.e., through the [Joint Entrance Examination](#).^[8] In 1998, the first batch of students were accepted into the Master of Technology program through the [GATE](#).

Campus and geography[edit]

The campus of IIT Guwahati is on the northern banks of [Brahmaputra](#) and abuts the [North Guwahati](#) town of [Amingaon](#). The campus is on a 700 acres (2.8 km^2) plot of land around 20 km from the heart of the city. It has the Brahmaputra on one side and hills and vast open spaces on others.^[1]



IIT Guwahati



IIT Guwahati Hostels

IIT Guwahati is a fully residential campus. All the students live in hostels on the campus. The hostels are named after rivers and tributaries of North-East India: Manas, Dihing, Kapili, Siang, Kameng, Barak, Subansiri (girls' hostel), Umiam, Dibang(currently not in use), Brahmaputra (largest hostel in all the IITs^[citation needed]), Dhansiri (new girls' hostel), Lohit and Disang (new boys' hostel). Apart from these, there is a married scholars' hostel for married postgraduates. Most students at IIT Guwahati are given a separate room. Each room comes equipped with requisite basic amenities. The toilets and bathrooms are shared (three of each for every ten rooms on average). Every hostel has a mess, a canteen, a juice centre, a stationery shop, a library, a TV room, a sports room (for indoor sports), and laundry facilities.^[9] The hostels are provided with 24-hour Internet facility. The boys hostels are single seated, i.e., every boarder gets a single room.

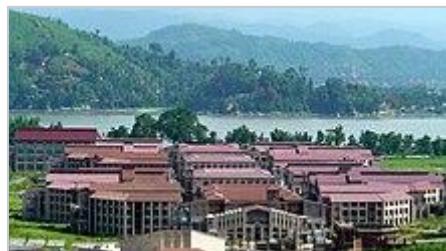
Organisation and administration^[edit]

Governance^[edit]

See also: [Indian Institutes of Technology](#) § [Organisational structure](#)

All IITs follow the same organization structure which has [President of India](#) as visitor at the top of the hierarchy. Directly under the president is the IIT Council. Under the IIT Council is the board of governors of each IIT. Under the board of governors is the director, who is the chief academic and executive officer of the IIT. Under the director, in the organizational structure, comes the deputy director. Under the director and the deputy director, come the [deans](#), heads of departments, registrar.

Departments^[edit]



IIT Guwahati houses the following departments:

- Department of [Biosciences and Bioengineering](#)
- Department of [Chemical Engineering](#)
 - Center of Excellence for Sustainable Polymers
- Department of [Chemistry](#)
- Department of [Civil Engineering](#)
- Department of [Computer Science and Engineering](#)
- Department of [Design](#)
- Department of [Electronics & Electrical Engineering](#) (previously known as the Department of Electronics and Communication)
- Department of [Humanities and Social Sciences](#)
- Department of [Mathematics](#)
- Department of [Mechanical Engineering](#)
- Department of [Physics](#)

The aforementioned departments of the Institute offer [B. Tech.](#), [B. Des.](#), [M. Des.](#), [M. Tech.](#), [M.A. \(Development Studies\)](#), ([Liberal Arts](#)), [M.Sc.](#) and [Ph.D.](#) programmes.

Academic centres[\[edit\]](#)

IIT Guwahati is home to nine academic centres.

- Centre for Disaster Management and Research
- Centre for Drone Technology
- Centre for the Environment
- Centre for Indian Knowledge Systems
- Centre for Intelligent Cyber-Physical Systems
- Centre for Linguistic Science and Technology
- Centre for Nanotechnology
- Centre for Rural Technology
- Centre for Sustainable Polymers
- Centre for Sustainable Water Research

Academic schools[\[edit\]](#)

- School of Agro and Rural Technology
- School of Business
- Mehta Family School of Data Science and Artificial Intelligence
- School of Energy Sciences and Engineering
- School of Health Science & Technology
- School of Humanities & Social Sciences

Extramural centres[\[edit\]](#)

IIT Guwahati is home to five academic centres.

- Central Instruments Facility

- Centre for Computer & Communication Centre
- Centre for Career Development
- Centre for Creativity
- Centre for Educational Technology

Academics[\[edit\]](#)

Presently there are about 7047 students on rolls,^[10] 406 faculty members and 510 support staff.^[11]

Admission[\[edit\]](#)

Admission in IIT Guwahati for UG Courses is done through [JEE Advanced](#) for Engineering. Until 2015, admissions in UG Design Course was happening through JEE Advanced. It now happens through [UCEED](#). Admission in PG is done through [IIT-JAM](#), [GATE](#) score, and through [CEED](#) for Designing, while through Ph.D-NET examination or Ph.D. entrance examination and/or interview one can get admission into Ph.D. Courses.

Rankings[\[edit\]](#)

University and college rankings	
General – international	
QS (World) (2023) ^[12]	384
QS (Asia) (2023) ^[13]	124
Times (World) (2023) ^[14]	1001–1200
General – India	
NIRF (Overall) (2022) ^[15]	8
Engineering – India	

Government colleges:

Internationally, IIT Guwahati was ranked 384 in the [QS World University Rankings](#) of 2023.^[12] In India, among engineering colleges, it was ranked 7 by the [National Institutional Ranking Framework](#) in 2022^[16] and 7 among government colleges by [Outlook India](#).^[17]

Param Ishan^[edit]

IIT Guwahati hosts Param-Ishan which is the fastest and most powerful super computer in northeastern, eastern and southern regions of the country.^[18]

Placements^[edit]

The BTech in Computer Science Engineering (CSE) program at [IIT Guwahati] aims to provide students with strong technical skills and industry exposure, preparing them for successful careers in the field of software development and technology. The program has a dedicated Placement Cell that works closely with students and recruiters to facilitate job placements.^[citation needed]

Computer Science and Engineering Placement^[edit]

For the academic year 2022-23, the average package (including domestic & international offers) for Computer Science and Engineering (CSE) students stood at Rs 41 lakh per annum (LPA), a significant increase from the previous year's average of Rs 28 LPA. This upward trend demonstrates the industry's high demand for skilled software engineers. Moreover, the highest package offered to a CSE student reached an impressive Rs 2.4 crores per annum, reflecting the exceptional talent nurtured by the program.^[citation needed]

Branch-wise Placements^[edit]

For placement statistics of other branches, including branches like Electronics and Communication Engineering (ECE), Mechanical Engineering (ME), and others, students can refer to the Centre for Career Development at [University/Institute Name]. The Centre for Career Development serves as a valuable resource for students, providing them with information, guidance, and assistance throughout the placement process. The center collaborates with various industries and organizations to facilitate placements across different sectors.^[citation needed]

Student life[edit]

Annual festivals[edit]

Every year the students and administration of IIT Guwahati come together to organize a number of festivals and competitions. The major festivals include [Alcheringa](#), the annual cultural festival, [Techniche](#), the annual techno-management festival, Udgam, the annual entrepreneurship summit and Research Conclave. Apart from these the Students of IIT Guwahati participate in the annual [Inter IIT Sports Meet](#). Apart from these the General Championship (GC) is widely celebrated across the hostel communities in the institute, the combined score in the inter hostel meets Kriti (Tech), Manthan (Cultural) and Spardha (Sports) is used to decide the winning hostel.

Alcheringa[edit]



Israeli psychedelic rock band Ouzo Bazooka perform at the World Carnival, Alcheringa 2016

Main article: [Alcheringa \(Festival\)](#)

Alcheringa, popularly known as "Alcher", is the annual cultural extravaganza of the IIT Guwahati. It started in 1996 as a student-run nonprofit organisation catering primarily to the youth of the nation.^[19] Held for three days and four nights, Alcheringa's 2018 edition witnessed an estimated footfall of 1,00,000 people.

Techniche[edit]

Main article: [Techniche](#)

Techniche is the techno-management festival of IIT Guwahati. Techniche is held in September every year over three days. Techniche hosts various events, competitions, exhibitions and workshops.

Techniche conducts [Technothlon](#) and provides students from schools and colleges across India a platform to interact with many experts in subject areas through its lecture series. It has been attended by [R. Chidambaram](#), [Kiran Bedi](#), H. C. Verma, Mike Fincke, John C. Mather and others.

The [Guwahati Half Marathon](#) is hosted^[20] by Techniche a week before the event.

Udgam[edit]

Udgam, is the annual Entrepreneurship Summit of IIT Guwahati. Organized by the institute's Entrepreneurial Cell, it aims to inspire young students and graduates of North-East India to embrace entrepreneurship .^[21] Apart from a series of talks by eminent entrepreneurs there are plethora of workshops & networking sessions which happen during the festival.^[22] It is usually held as an annual three-day summit in January.

Prayatna[edit]

Prayatna is the annual socio-welfare fest of the Indian Institute of Technology (IIT) Guwahati.^[23] The topics covered at Prayatna include: social justice, recognizing privilege, and exploring identity.

Collaborations[edit]

IIT Guwahati has partnered with [National Thermal Power Corporation \(NTPC\)](#) to design and develop a highly energy-efficient plant for capturing CO₂ from power plants. This plant was developed by a research team led by Prof. Bishnupada Mandal, Department of Chemical Engineering, IIT Guwahati. This project stands to benefit the petroleum industry, as well as strengthen the [United Nations' Sustainable Development Goals \(SDGs\)](#).^[24]

Indian Institute of Technology Hyderabad

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	Kandi-502284, Sagareddy, Telangana, India
Contact Person For Admission:	Mr. Devadevan V
Designation:	Deputy Registrar Academics
Email:	dr.acad@iith.ac.in
Alternate Email:	ar.acadug@iith.ac.in
Phone Nos:	91-40-23016057
Fax No:	91-40-23016000
Mobile No.:	

About the Institute

Indian Institute of Technology Hyderabad (IITH) was established in the year 2008. As on 01st June 2023, IIT Hyderabad has a student strength of 4193 (1690 BTech, 69 BDes, 180 MSc, 956 MTech, 123 MDes, 17 MA and 1158 PhD). IITH aims to train well-rounded engineers who are ready to tackle real-world problems. In a short period of time, IIT Hyderabad has emerged as a prestigious institute of higher learning producing students of great calibre. IITH is creating a unique holistic educational ecosystem that will foster interactive learning, cutting edge research, strong industry collaboration, and entrepreneurship. It is providing an environment wherein

students and faculty are not afraid to experiment and celebrate their ideas.

Hyderabad campus is spread over 570 acres, which is about 60-minute drive from the Rajiv Gandhi International Airport, Hyderabad, and 30-minute drive from Gachibowli – the IT and financial hub of Hyderabad. The campus buildings are designed by world renowned architects and have the ultra-modern aesthetics with world class amenities. The hostels have a very unique architecture, making it more of a dwelling rather than a student hostel. IITH has a vibrant student gymkhana that oversees all the aspects of the students' life during their stay at IIT Hyderabad.

Fee Structure

IIT HYDERABAD

Fee Structure for UG (BTech & BDes) Students (including OCI/PIO cardholders) (July to December 2023 Semester)

Newly Enrolled Students

1. ONETIME FEE (to be paid at the time of Registration of First Semester)	Amount in Rs.
1 Joining Fee (Admission Fee, ID Card and Certificates Fee, Library Fee, Institute Alumni Fee)	5,000
1 Student Activity Funds (Celebrations, Training & Placement)	3,000
1 Security Deposit (Refundable) (Hostel, Mess, Library and Laboratory)	9,000
Total One Time Fee (At the time of Registration)	17,000
2. SEMESTER FEE	Gen/EWS/O BC/ OCI/PIO SC/ ST/ PH

2	Tuition Fee		1,00,000	NIL
.				
1				
2	Other fee (Registration fee, Examination Fee, Gymkhana Fee, Medical Facility, IT charges, Sports fee, Institute maintenance,			
2	Transport Charges)		12,500	
.				
2				
2	Student Welfare Fund		1,000	
.				
3				
2	Hostel Expenses & Mess Expenses (License Fee, Electricity, Water, Dining, and other charges)		23,250 (16,250*+7,000)	
4				
2	Hostel & Mess Establishment and Amenities Charges		10,000	
.				
5				
	Total Semester Fee for BDes/BTech 2023 Batch		1,46,750	46,750
3.	Medical Insurance**			
3	Medical Insurance (per annum)		1,550	
.				
1				
	Grand Total Fee	1,65,300	65,300	

Notes:

1. *Mess Expenses (Dining Charges) are @ Rs. 130/- per day for 125 days. Total: Rs. 16,250/- and are subject to change.
2. **The medical insurance premium amount (per annum) and insurance policy coverage (presently Rs.2,00,000) is subject to change.
3. All UG students are expected to stay in hostels.

IIT HYDERABAD

Fee Structure for Foreign Nationals (Other than OCI/PIO Card Holders) For UG (BTech & BDes) Students (July to December 2023 Semester) Newly Enrolled Students

1. ONETIME FEE (to be paid at the time of Registration of First Semester)		Amount in Rs.
1	Joining Fee (Admission Fee, ID Card and Certificates Fee, Library Fee, Institute Alumni Fee)	5,000
1	Student Activity Funds (Celebrations, Training & Placement)	3,000
1	Security Deposit (Refundable) (Hostel, Mess, Library and Laboratory)	9,000
3		
Total One Time Fee (At the time of Registration)		17,000
2. SEMESTER FEE		Amount in Rs.
2	Tuition Fee	3,00,000
1		

	Other fee (Registration fee, Examination Fee, Gymkhana Fee, Medical Facility, IT charges, Sports fee, Institute maintenance, Transport Charges)	
2		12,500
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2	Student Welfare Fund	1,000
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3		
2	Hostel Expenses & Mess Expenses (License Fee, Electricity, Water, Dining, and other charges)	23,250 (16,250*+7, 000)
4		
2	Hostel & Mess Establishment and Amenities Charges	10,000
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5		
	Total Semester Fee for BDes/BTech 2023 Batch	3,46,750
	3. Medical Insurance**	
3	Medical Insurance (per annum)	1,550
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1		
	Grand Total Fee	3,65,300

Note:

1. *Mess Expenses (Dining Charges) are @ Rs. 130/- per day for 125 days. Total: Rs. 16,250/- and are subject to change.
2. **The medical insurance premium amount (per annum) and insurance policy coverage (presently Rs.2,00,000) is subject to change.

3. All UG students are expected to stay in hostels.

Academic Structure

The institute offers a large number of Undergraduate and Postgraduate programs in Engineering, Science, Design, Liberal Arts and Entrepreneurship & Management. This includes BTech, BDes, MSc, MTech, MA, MDes and PhD. Currently, IIT Hyderabad has 18 departments + 1 Centre for Interdisciplinary Programs.

IIT Hyderabad follows a semester system. An Academic Year (July-April) consists of 2 semesters, each approximately 16 weeks' duration. The first semester begins in the last week of July / first week of August and ends by the last week of November. The second semester starts in the first week of January and ends by the last week of April /first week of May. A student is required to register the relevant courses listed in the curriculum for that semester.

IIT Hyderabad offers the BTech undergraduate program for students admitted through JEE (Advanced). IITH has implemented a very novel academic program, referred to as, Fractal Academics – the key idea is to atomize courses, provide breadth and depth, emphasize courses in liberal arts as well as creative arts, emphasize project work, and create an interactive learning ambience. A typical 3 credits course leading to 42 lecture hours in a semester. Fractional credits can be 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 having 7, 14, 21, 28, 35 and 42 lecture hours, respectively.

The fractal academic program is a novel holistic approach to undergraduate teaching. It has multiple goals among which fostering undergraduate research, interdisciplinary learning and encouraging creativity are the primary ones. In the first year of study, students are introduced right away to a wide gamut of courses not only from the engineering spectrum but also from science and liberal arts. This is aimed at giving the students a flavour of various engineering disciplines in addition to whetting their appetite for the science, creative and liberal arts. In the second year, an in-depth study of the core engineering courses is undertaken. This is designed to firm up the students' foundations in fundamental areas of their chosen branch. In the third year of study, students are encouraged to pick an area of their choice (within their branch) and take relevant elective courses. By the end of the third year, the students are primed to take on challenging research projects. In the final year the interested and eligible students are encouraged to work on research problems. Two common threads run through all four years of study - independent projects and creative/liberal arts courses. Students are required to pursue independent projects to "learn by doing" as well as to explore engineering problems that pique their interests. Through the study of liberal and creative arts, it is hoped that students appreciate non-technical disciplines which in turn should help them become better engineers.

In addition, IIT Hyderabad offers 'double major', 'minor', 'honors', 'BTech to MTech conversion' and 'BTech to PhD conversion' subject to fulfilment of eligibility criteria by the department and Institute. It may be noted that the Branch change option is discontinued at IIT Hyderabad.

Double Major: If a student does say 24 extra credits in a given department he/she can get a double major.

A "Minor" is awarded to a student after completion of twelve credits. In addition to BTech, The student's performance in a course is continuously evaluated throughout the semesters and culminates in the award of a Grade on a 10-point scale.

Similarly, “Honors” is awarded to a student after completion of twelve credits with a prescribed set of courses and projects in their own academic curriculum.

Conversion to Dual Degree program (BTech to MTech/BTech to PhD):

The primary motivation for a dual degree program is to create a win-win proposition for both students and faculty.

Scope and description of courses

Artificial Intelligence

Artificial Intelligence (AI) has grown over the last decade from being a dream to a reality that impacts each one of our lives. While AI began as a sub-area of Computer Science, the last few years have seen a significant broadening of the field that has resulted in AI becoming horizontal across all engineering disciplines. The 4-year BTech programme in AI will provide a comprehensive, holistic pedagogy of AI, from mathematical foundations to applications. The curriculum includes related courses from Computer Science (e.g. Machine Learning, Deep Learning), Mathematics (e.g. Linear Algebra, Probability, Statistics, Optimization), Electrical Engineering (e.g. Signal Processing, IoT, Drones, Control Theory), Mechanical Engineering (e.g. Robotics, Industry 4.0), Biomedical Engineering (e.g. Computational Neuroscience) and Liberal Arts (e.g. AI and Ethics). The foundational courses of Computer Science are part of the curriculum to provide the students with a gateway for future educational opportunities.

The program includes a wide choice of advanced elective courses in topics related to AI including mathematical foundations such as statistical learning theory, information theory, kernel methods, as well as applications such as computer vision, information retrieval, speech processing, natural language processing, and reinforcement learning. The programme also has a provision to credit courses from other disciplines of science, engineering, creative and liberal arts. There are also many opportunities for students to undertake research projects related to AI during the program, as well as opportunities to carry out internships elsewhere as part of the curriculum. Please see <https://ai.iith.ac.in/btech.html> for more details.

Gender-based and/or handicap (physical/ neurological)-based restrictions: None

Biomedical Engineering

The Biomedical Engineering at IIT Hyderabad is where the boundaries between disciplines fade for defining excellence in research and education. BME offers interdisciplinary expertise in addressing the grand healthcare challenges facing humanity. The department offers engaging and dynamic under-graduate, graduate and doctoral programs in various focus areas to invigorate the passionate minds. We are a department with 10 faculties, 7 staff members, 29 post-graduate and around 100 PhD students. The primary mission of the department is to foster interdisciplinary work of highest quality by bringing together a broad spectrum of faculty expertise under a single umbrella to focus on research in Biomedical engineering.

The department has expertise and offers courses in the domains of Medical device innovation and design; 3-D Bioprinting; Organ-on-chip and Lab-on-chip; Regenerative medicine using stem

cells; Biomedical Imaging and therapeutics; Bio/neuro-mimetics, Natural and Artificial intelligence in healthcare; Computational and experimental neurotechnology; healthcare data analytics; Computational and experimental biomechanics; Nano-biomaterials and nano-medicine; Cancer novel treatment strategy, Biomedical sensors and transducers, to name a few.

Gender-based and/or handicap (physics/ neurological)-based restrictions: None

Biotechnology and Bioinformatics

The Biotechnology Department offers a 4-year B Tech program in Biotechnology and Bioinformatics. Like all other BTech courses at IIT Hyderabad, this program follows an eight-semester fractal curriculum comprising core courses, department elective courses, free electives, seminars, experiments in laboratory, projects and creative/liberal arts courses.

The B. Tech. program in Biotechnology and Bioinformatics is application-based program and trains students for solving biological problems using biological and computational approaches. It aims to provide essential skills in Biotechnology, including molecular cell biology, biochemistry, systems biology and nanobiotechnology. It is also designed to train the student with Bioinformatics skills, including DNA sequence analysis, drug discovery, disease characterization, genomics, proteomics and data analysis. The curriculum provides the opportunity for the students to take courses from different departments such as computer science, artificial intelligence, maths, physics and chemistry in the first two semesters. Apart from the regular BTech curriculum, students will have an opportunity to increase their depth in the subject by undertaking elective courses from any other departments, including Electrical, Mechanical, Chemical, Civil, Material Science. Students can also get a minor in areas of their interest, outside the department, like entrepreneurship, computer science, etc., by completing 12 credits in their area of interest.

The Biotechnology and Bioinformatics program prepares the students for a career in academia and industry related to life science, healthcare, biotech, medical coding, data science and bioinformatics.

Gender-based and/or handicap (physics/ neurological)-based restrictions: None

Chemical Engineering

The main goal of the department is to create the next generation of chemical engineers who are capable of solving the technological challenges faced by modern society. The carefully tailored undergraduate curriculum prepares a student to take up industry jobs or graduate studies. The undergraduate program covers subject areas from core chemical engineering, advanced electives in chemical engineering, free electives from allied engineering disciplines, laboratory experiments, basic sciences, soft skills and topics from creative & liberal arts.

The holistic pedagogy that is followed in our academic programs provides our graduates with the skills to take up challenges of modern society in an informed way. Several of our alumni are placed in reputed chemical and allied industries. Many of our alumni are also pursuing graduate studies in globally renowned universities across the world. Our outstanding student-to-faculty

ratio facilitates personalized teaching and research guidance. We strive to create an environment that enables students to identify and pursue their professional goals with integrity and an eye for excellence.

Gender based and/or handicap (physical/neurological)-based restrictions: None

Civil Engineering

Civil Engineering is concerned with addressing the current and future needs of society in “all things Civil”. That is, in planning, designing and constructing advanced and robust buildings and structures, built on stable foundations, in satisfying the water needs of the country, and in developing measures for a cleaner and healthier environment free from chemical and biological pollutants. Civil engineers plan transportation networks, design and construct transportation infrastructure to facilitate the movement of people and goods such as bridges, tunnels and train and roadway systems. They also predict the outcomes and develop mitigating measures for the influence of natural disasters such as floods and earthquakes.

Civil engineers also design and construct large water storage and distribution systems, such as dams and canals, to sustain the requirements of urban society and agriculture. They also deal with the outcomes of urban development such as traffic management and mitigating congestion, design and operation of water treatment and wastewater disposal systems. Civil engineering includes all the above aspects in the course curriculum.

Gender-based and/or handicap (physical/neurological)-based restrictions: None

Computational Engineering

Modern industry uses computer modelling in almost all aspects of product and process development, be it in the designing of modern aircraft or discovering a new medicine. These computer modelling software and methodology use advanced mathematics, numerical methods and algorithmic approaches. The BTech program in Computational Engineering aims to produce graduate engineers who will have the expertise in using modern computational methods for a wide variety of industrial applications. The program will train students capable in using computer modelling and simulation tools for these engineering applications.

Computational Engineering is envisaged to be an interdisciplinary BTech program. The curriculum consists of four important components: (a) Applied Mathematics, (b) Core Engineering, (c) Data Structures & Analytics and (d) Computational Applications. Through these four pillars of the program, the student will gain proficiency not only to use the various engineering methodologies, but also get trained in some of the important aspects of core engineering so that the bridge between computational solutions and physical principles is established. The Core Engineering and Applied Mathematics courses are designed to give a broad understanding of the general engineering principles. The depth in the curriculum is achieved by introducing the students to various computational methods that include fundamentals in scientific computing, data structure and its analysis and the application of computational tools. The graduates from this program are expected to be employed in a wide variety of engineering and consultancy firms that use computational methodologies to design products and processes.

Gender-based and/or handicap (physics/ neurological)-based restrictions: None

Computer Science and Engineering

The 4-year B. Tech. program in the dept. of CSE seeks to lay a strong foundation in both theoretical and practical aspects of computing. Fundamental courses with theoretical and mathematical underpinnings like discrete mathematics, algorithms and their analyses, data structures, theory of automata, formal languages and computation are offered in the initial years. These courses also emphasize on practical applications of the rich theory and mathematics in computer science. This knowledge dovetails well into systems courses that emphasize on the practical and engineering aspects, such as architectures of computers, programming languages, compiler design, operating systems, and design of databases, computer networks and application software.

The program includes a choice of advanced elective courses in each of the above topics, as well as in areas such as machine learning, computer vision, big-data analytics, wireless networks and mobile computing. The program also has a provision to credit courses from other disciplines of science, engineering, creative as well as liberal arts.

Gender-based and/or handicap (physical/ neurological)-based restrictions: None

Electrical Engineering/ Electrical Engineering (IC Design & Technology)

The department offers a four-year Bachelor of Technology (BTech) program. The eight semester fractal curriculum comprises core courses, department elective courses, free electives, seminar, experiments in laboratory, projects and creative/liberal arts courses. The fractal program offers unprecedented flexibility so that the students can undertake various elective courses that provide exposure in various disciplines of EE such as Communications and Signal Processing, Microelectronics and VLSI design, Power Electronics and Power System, Control System and Embedded Systems. The undergraduate students can also undertake various research projects through BTech projects. More details about undergraduate research opportunities are given in the website.

Apart from the normal BTech curriculum, students have an opportunity to increase their depth in Electrical Engineering by undertaking additional courses. By completing 12 credits from a broad list of prescribed courses, a student can earn Honors in Electrical Engineering. Students can also get a minor in areas of their interest, outside the department, like entrepreneurship, computer science, etc. by completing 12 credits in their area of interest.

Gender based and/or handicap (physical/neurological)-based restrictions: None

Engineering Physics

Physics has been central to technological development as it can be seen from day to day life. A lot of developments took place in the past few decades which promise to change the face of technology in the coming years. But to understand and appreciate these developments and to translate these to technology, it is very essential to grasp the fundamental principles of Physics.

The Engineering Physics course at IIT Hyderabad aims to provide students basic understanding in Physics in terms of offering various basic level courses coupled with hands-on training. In addition, the curriculum also contains Engineering courses, across departments which provide the bridge between engineering and technology. Moreover, the liberal art and creative art courses inculcate the capability in the students to express the ideas more effectively to the community. The curriculum is designed to provide students the depth needed to understand the advanced level physics courses followed by various courses such as, quantum mechanics, mathematical physics, statistical mechanics, condensed matter physics, particle physics, computational methods, laser technology, accelerator physics and photonics etc. In addition to these, advanced level courses on various research fields are offered. The Engineering Physics course is a real concoction of fundamental Physics and applied sciences and technology courses, which can ignite young minds to be driven towards creativity and innovation for new age technologies.

The Engineering Physics program prepares students to face all kinds of challenging careers in industry, advanced study in engineering, science, and technology and in academia.

Gender-based and/or handicap (physics/ neurological)-based restrictions: None

Engineering Science

Engineering Science is a unique interdisciplinary B.Tech program started at IIT Hyderabad for the first time in 2012. It focuses on the 'T-EDUCATION' model where the horizontal line in T corresponds to breadth while the vertical line corresponds to the depth. The curriculum is designed such that for the first two years of this program students take courses from different departments such as Computer Science, Electrical, Mechanical, Chemical, Civil, Material Science, Math, Physics and Chemistry. Later, eligible students will be given the option to select their core branch in the third year as per their preference and continue to specialize in them. The core options could be either Sciences or Engineering stream as it is left to the student choice. This 'T' based model gives a holistic perspective in engineering education. It is believed that the graduates from this program will excel in any organization because of their strong multidisciplinary background. However, if a student wishes he/she can continue in ES for four years. All the faculties in Engineering Science Program are adjunct faculties drawn from various branches. 10% of the existing batch will be permitted to enter in one particular specialization after completion of second year. However, there will be no cap on number of students continuing with four-year ES program.

Industrial Chemistry

The chemical industry of India is a major contributor to the Indian economy, contributing 7% of the country's GDP. The market size for the production of agrochemicals, fertilizers, and petrochemical sectors in India currently stands at US\$178 billion and is expected to grow to US\$300 billion by 2025. These fast-growing chemical/petrochemical industries have excessive demand for dedicated chemists/engineers with expertise in industrial skills to work on novel research and technological developments. The expertise to work in Industrial Chemistry has to transcend beyond the realm of a Chemistry Lab and focus on an application-oriented practical approach with sound knowledge of both engineering and fundamental Chemistry. Department of Chemistry has designed a unique 4 years B.Tech Program in Industrial Chemistry with particular

emphasis on producing finest graduate students with adequate knowledge of Chemistry and technology to work in various chemical industries, such as pharma and drug design, polymer industry, petrochemical industries, and several industries in energy science.

This program aims to promote academic excellence in solving Industrial Chemistry problems and provide the stimuli to students to excel in higher education, research, innovation, and entrepreneurship in academia and industry. This B.Tech program offered by the Chemistry department at IITH is a perfect blend of advanced experimental/computational research, industry exposure, and co-curricular activities, offering vibrant experiences to budding engineers for various chemical industries. This program is expected to bridge the gap between Chemistry and Industry; this would be accomplished through training in current topics like Green Chemistry, materials for energy and environment, drug design and development, biochemistry, nanotechnology, machine learning, and computer simulations in Chemistry. Such an all-rounded training in basic and applied Chemistry will also enable them to handle any challenging real-world chemistry-oriented problems.

Materials Science and Metallurgical Engineering

Materials Science and Metallurgical Engineering (MSME) is an interdisciplinary science enriched engineering branch which deals with material discovery and design for applications, through the material paradigm (synthesis, characterization, structure, property, performance). Materials science and metallurgical engineering is a very fast evolving and expanding branch and thus the curriculum has to be constantly evolving. Currently, MSME offers teaching and research spanning across various disciplines of structural, functional and computational materials science.

A B.Tech graduate from MSME department at IITH is trained to be an expert at the core concepts as well as conscious of evolving multidisciplinary domains. The B.Tech curriculum at IITH is unique, which facilitates expansion of the core subject acumen as well as exposure to multidisciplinary courses. The curriculum allows a good opportunity to gain specialization within the department as well as across departments owing to a large number of free electives. The department electives are often trending subjects which expose the students to recent developments and popular subjects in materials science and metallurgical engineers. Students get opportunity and exposure to the state of art and sophisticated research facilities through project works. The department prepares its students for research roles as well as other professional roles by providing a conducive environment for all round development.

Gender based and/or handicap (physical/neurological)-based restrictions: None

Mathematics and Computing

The curriculum is designed in a unique way to nurture future industry professionals and scientists. There are three stages of the curriculum. Students do introductory mathematics, physics, chemistry, life sciences, and bio-engineering courses in the first stage. The program also begins with courses on programming and skill development such as English communication, introduction to entrepreneurship, artificial intelligence, and creative arts electives.

The second stage is a phase of nurturing students to make them multiskilled both for industry and academics. During the 3rd to 5th semesters, the program covers the core foundational

courses related to pure and applied aspects of Mathematics, Statistics and Computing from Maths, AI, CSE and EE Departments. The blend of carefully selected theoretical, applicable, and computing courses enable students to choose the career they wish to pursue.

The third stage is all about exploration. The dream career that students decide to pursue by the end of the second stage begins from the 6th semester. The exploratory nature comes from the fact that 38 credits out of 46 credits from the 6th to 8th semesters come in electives. Students have 12 credits of free elective courses to choose from any department in the institute. The students have an option of a semester-long Industry project in the 6th semester. Department also offers credited research projects for two semesters in this stage up to a total of 6 credits.

Upon successfully completing the Mathematics and Computing program, students will be able to pursue the dream of industry professionals. This program also provides an opportunity for higher education in Mathematics, Computer Science, Artificial Intelligence etc. in world-class universities.

Gender based and/or handicap (physical/neurological)-based restrictions: None

Mechanical Engineering

Mechanical Engineering is the broadest of engineering disciplines. Founded on classical subjects like Mechanics, Dynamics, Thermodynamics, Manufacturing and Design, the field gives entry into the design, analysis and manufacturing of automobiles, aircraft, locomotives, ships, power-plants, and also inter-disciplinary areas like energy and environment, earth and planetary sciences, nuclear, fusion, solar, wind and alternate energy. The program at IIT Hyderabad is designed to train the students for jobs in modern industry in research and development, and also prepare them for higher studies in India and abroad.

Gender-based and/or handicap (physics/ neurological)-based restrictions: None

Rules For Change Branch

At IIT Hyderabad we discontinued the branch change option for the students from the academic year 2021.

Faculty

IIT Hyderabad boasts of a 302 strong faculty fraternity, with the ratio of full professors to Associate and Assistant being at a healthy 1 (67): 2 (91): 2 (144). Faculty members of the institute are not only involved in research that is at once both socially relevant and avant-garde but also are known for their pedagogical indulgence having been the harbingers of many a novel teaching methodology from fractal academics to flip teaching.

Faculty members have continually nurtured their sense of belongingness as equal partners in the furtherance of the institute and actively contribute towards the same by assuming various administrative roles, from being a faculty advisor to serving on different committees.

Faculty of IITH have garnered many recognitions, both national and international. They have been recipients of many awards including the prestigious Young Scientist /Fellowship recognition from the different scientific societies of the country (INAE, INSA, INYAS, NASI, IAS). Many continue to serve on the editorial boards of reputed journals and on project review committees of major funding bodies like DST, DBT, etc.

The diverse expertise among the faculty of IITH has allowed the institute to take the lead in establishing several unique undergraduate and graduate programs including BTech in Engineering Science (ES), Math and Computing (MnC), and more recently, Artificial Intelligence (AI). The ES and AI BTech programs are the first of their kind in the nation. Innovative MTech programs in AI, Climate Change, Data Science, along with several specialized areas like Additive Manufacturing, Energy Science and Technology, E-waste Resource Engineering and Management, Integrated Sensors Systems, Medical Device Innovation, Networks and Information Security, Polymers and Bio Systems Engineering, Smart Mobility are designed to meet the ever evolving and increasing technology needs of India.

Facilities

Keeping in view the vision of IITH i.e. inventions and innovations, several state-of-the-art research laboratories have been set up, which are highly unique to IITH. To name a few such facilities, the Institute has (a) Nanotechnology, (b) X-Materials Innovations Laboratory and (c) Cyber Physical Systems / Internet of Things, (d) High Performance Computing Center and many more centers are in the offing. IITH is the first IIT to offer a course on Digital Fabrication to the students. IITH has all the other infrastructure facilities, like library, access to almost all online publications, computing, networking, the campus is Wi-Fi enabled, state of the art workshops, and latest teaching and research laboratories.

Student Life at Institute

Hostels and Dining Facility:

IIT Hyderabad is a residential institute and provides accommodation to students wishing to reside in the hostels. The Overall supervision and administration are looked after by the Council of Wardens and the Hostel Office. The dwelling places are as modern as they can be, and the hostels have impressive architecture. All hostels are fully Wifi connected, meaning that the Internet permeates the space we live in. Hostel life is different from staying at home, away from parents but you will realize that this is the phase of life where you will develop many lifelong connections, become independent and disciplined with a vibrant and colorful atmosphere. With activities round the year, you will enjoy the pleasant journey that is ahead of you. This Hostel will become your second home and will play a huge role in transforming your life changing travel. We have 14 Hostel blocks (10 For Boys and 4 For Girls) . The Blocks are well lit, highly ventilated and have drinking water on each floor. You can just sit by and enjoy the morning sunrise and evening sunset from your balconies leisurely. In the Main Hostels, Students are given an individual room with a cot, study table, spacious cupboard and multiplug points (do not forget the

LAN). The Hostel rooms have inbuilt cooling system (Radiant Cooling) which helps to beat the heat during summers. All hostels are equipped with a LAN facility, solar water heaters and solar lighting. Banking services, 24X7 Medical service, Recreation rooms, Table Tennis rooms, Dance room, Music Room, Robotics room, Gym and TV room etc. give students a platform to go beyond the Academics. IITH provides hygienic mess facilities for all students with a menu which is always open to change as per the interest of the students, if necessary, on a monthly basis. Both north Indian and south Indian varieties are served in the dining hall. The quality of food is regularly inspected by the student representatives and the wardens.

Sports Facility:

Students are involved in numerous sports to enable them to maintain their physical fitness and develop team spirit. A new state of art Sports Complex is available for students:

The following facilities are available in new SNCC Complex.

Indoor facilities

a) Badminton courts with Yonex mats 4 courts.

b) Indoor synthetic jogging track 200mtrs.

c) GYM for boys and girls.

d) Squash Woodend courts 4no

e) TT hall with acrylic flooring.

f) Snooker room

g) skating ring.

h) Volleyball courts PU flooring 4no

i) Basketball courts PU flooring 2no

j) Steam bathroom.

k) changing rooms for boys and girls rooms.

l) Chess room.

m) Indoor swimming pool 50mtrs.

n) Baby swimming pool 20m ts.

Outdoor facilities

- a) Football ground with Floodlights.
- b) Cricket ground with Floodlights.
- c) 400 mtrs synthetic Athletics track with 8 lanes.

Student Events:

The student life at IITH has been and continues to be very eventful. There is a very visible flow of energy at the hostel with a lot of events and celebrations almost every month. Starting from Orientation Program & Fresher's Night at the start of the academic year until the Farewell at the very end our calendar is fully packed with events of all kinds like the Ice cream nights for the foodies and DJ Nights for the people who want to dance their hearts out. The Sci-Tech week for all the geeks and of course the open mic nights for your timely dose for entertainment and culture and also not to forget the biggest Fests of Hyderabad, the techno-cultural fest of IITH-Elan & nVision. The College canteen, for when it's not the mess working hours and almost all hostel blocks are equipped with vending machines, which are your hunger saviours during your late night binge eating. The Shiru café run by Japanese students which gives three free drinks to every student per day also requires a special mention.

A whole lot of club activities are carried on at the hostels. Students keep themselves involved in a lot of activities in the hostel and they are fascinating in their own way that no student cannot resist from participating in all of them. Apart from those, one may always see interaction between students not only for exchanging ideas, thoughts and innovations but also having fun. Students are encouraged to participate in various cultural, sports and scientific/Technical events conducted by the Student Elected Body (Gymkhana) through various clubs . They are various students clubs like Sci-tech, Cultural, Behind the lens, Rangde manch, Lit-Soc etc which the students can get involved. Apart from the student clubs students can get involved in NSS, NCC, EBSB activities.

Various student celebrations like Techno-Cultural Fest (ELAN & N-Vision), MILAN (Inter hostel sports competition), Hostel UTSAVs (Hostel celebration), DIESTA, Inter IIT Sports meet, Inter IIT Tech meet, Inter IIT Cultural meet are organised every year.

The Open-Air Theatre (OAT) 42 ft x 19 ft LED wall, possibly one of the largest LED walls in the country and definitely the biggest among IITs is available for screening for various activities.

Student Gymkhana is the student body which aims to bring the students together for their overall development and welfare. All the students of IIT Hyderabad are members of the Student Gymkhana and they are bound by the Student Gymkhana Constitution and functions through its Executive Council. These members manage all the activities in their respective areas with the Gymkhana President coordinating them all. They are selected through the general elections which are held at the end of each academic year. Each area has its own Council which helps the Secretaries in conducting various activities throughout the year. Some important councils being Science and Technology Council, Cultural and Literary Council, Sports Council, Hostel Affairs

Council and Academic Affairs Council, Media and Public Relations Council. It oversees all the student festivals held at IITH as well.

Clinic is well-qualified doctors are available round the clock. General OPD timings: 8am-8pm. IITH Clinic provides 24*7 Emergency and Ambulance services. The Clinic has many nursing staff and other support staff for its functioning. Services available at IITH Clinic include General and Specialty OPD, Pharmacy, Pathological Laboratory. IITH Specialty Clinic was started in 2020 – Specialists (General Medicine, ENT, Gynecologist, Pediatrician, Psychiatry, Orthopedics, Cardiologist) from reputed Hospitals are available on specific days for consultation.

Psychological Counselors are available 24*7. To maintain overall being of the students' various programs like regular wellness sessions are conducted by eminent speakers in the field of mental health, Weekend Series for students, Icebreakers & sunshine weekend, Mental Health Articles sharing every 15 days, Group Sessions, Treasure hunt, Student buddy program and Vlogathon Competitions are conducted regularly. The first edition of the newsletter has been launched on World Mental Health Day (Oct 10th).

Financial Assistance

As per Government of India norms.

Training & Placement

The Office of Career Services at IITH guides students towards diverse career opportunities via internships, placements and higher studies by facilitating interaction of students with industries, universities, government, and research organizations.

IITH offers all the graduating students an opportunity to participate in the campus recruitment program. To give students a chance of solving some of the real time technological challenges of the industry during their UG program, IITH allows Semester-long Internship in all branches of B.Tech. & B.Des. during 6th semester, from Jan-June along with the regular Summer Internship program.

Over the years, many national and international reputed companies from different sectors have been regularly participating in the campus selection process. Tie-ups with industrial giants and overseas universities provide students with national and international career opportunities. These prestigious Industrial and Research opportunities broaden their perspectives in Technology as well as endow them with the adaptability, versatility, team spirit and disciplined work ethics.

IITH organizes “Japan Day” annually to encourage Japanese Companies keen in hiring Indian talents and to enable the students to explore career opportunities in Japan, broaden knowledge on areas of Technology in demand, career prospects and work culture in Japan.

IITH witnessed a significant increase in the number of offers from National and International companies of various sectors like Government, Consulting, Banking, Analytics, IT, Finance, Research, Educational, Manufacturing, Software, Automobile etc. for the academic year

2022-23. Around 340 companies registered for placements and a total of 620 offers were secured from 175 companies.

For Internships, 194 companies registered and a total of 287 offers were secured from 86 companies. 104 internship offers were converted to PPOs in 2022-23.

Along with companies of Indian origin, we have noticed a tremendous increase in participation of international companies from countries like Japan & Taiwan resulting in 55 international

Placement offers and 04 international Internship offers for the year 2022-23.

Some of the major recruiters are: ABB, Accenture Japan, Adobe, Alphonso Inc, Amazon, Arcesium, Atlassian, BNY Mellon, Deloitte, Exxon Mobil, DG Takano, Flipkart, Fujitsu, Goldman Sachs, Honeywell, I'm Beside You, Intel, KLA Tencor, Mathworks, Microsoft, Morgan Stanley, International, TT-AT, Oracle, Qualcomm, Salesforce, Samsung, ServiceNow, Sprinklr, TSMC, Yokogawa etc.,

IITH is a preferred choice for many recruiters due to its innovative academic program and research & industry excellence. The Office of Career Services facilitates Placements & Internships throughout the year in two phases to allow a good interaction between the students and recruiters to maximise career opportunities for all the students.

Industry And Alumni Relations

The growth of any institution relies heavily on the relationships fostered with its diverse stakeholders. At our institution, we prioritize creating avenues for our alumni to reconnect with their alma mater, ensuring they maintain a strong sense of connection. Additionally, we have taken the lead in developing initiatives aimed at building a resource base to meet the evolving needs of the industry, which in turn drives the progress of our nation and society as a whole. The Office of Alumni and Corporate Relations (ACR) at IITH is dedicated to fostering circular and sustainable relationships with our alumni and corporate partners.

To facilitate the connection between students and alumni, we have a dedicated student body called the Alumni Cell, which works closely with the ACR office. Through various activities such as Tech Talks, mentorship programs, internship opportunities, and career guidance, we have successfully initiated engagement between students and alumni. Furthermore, we have exciting plans to launch even more initiatives in the coming years.

The IIT Hyderabad Alumni Association (IITHAA) plays a significant role in supporting our endeavors and maintaining strong ties with our alumni. Serving as a vital interface between the alumni and the institute, IITHAA actively contributes to our initiatives. We greatly value the support and contributions of our alumni, who generously give back to the institute in various forms, including their time and financial assistance. As a token of our appreciation, we provide special privileges to our alumni, allowing them to enjoy campus facilities.

In recognition of our accomplished alumni, we have recently introduced the Alumni Awards, starting from the year 2020. These awards serve as a means to acknowledge and honor the

achievements of our alumni. Furthermore, we actively collaborate with industries to explore opportunities in academics, research, placements, and social responsibility, forming partnerships that benefit both the institute and the corporate sector.

Recreational/Extra Curricular activities

IIT Hyderabad aims to sculpt students to function as better citizens of the society by not only moulding the knowledge base of the students but their morale too. Students of IITH organize a yearly techno-cultural fest Elan & ηVision, showcasing the technical, cultural and management skills of students. Elan & ηVision was initiated in 2009 and the footfall proves the exponential growth that the fest experiences each year. It is usually held during spring, at the beginning of the year (January/February). The fest includes workshops, lectures, demonstrations, technical exhibitions, cultural performances and live concerts. Competitive activities cover design events, programming, simulations and modelling, quizzes, debates, applied engineering and robotics and various other technical events, some of which are decided by the existing technical clubs in IIT Hyderabad along with some informal events that never fail to amaze the crowd. Hostel General Championship "Milan" is a 10 days long inter-hostel celebration including activities in Sports, Cultural and SciTech to promote cohesiveness among the students. Students with fun, joy and entertainment take part in the events to win the Championship.

E- Cell (Entrepreneurship cell) of IIT Hyderabad encourages students to bring in an idea, develop the model and put it to practice. This has led to a lot of start-ups from our institute. Students at IITH follow a motto that "IF YOU CANNOT DO GREAT THINGS, DO SMALL THINGS IN A GREAT WAY". The main motivator is the E-summit which conducted yearly, with prestigious companies collaborating and also giving in problem statements for students to bring out innovative ideas and pitch it

Extra Mural Lectures at IITH intends to bring eminent personalities from eclectic domains on one platform to talk about various subjects like art, social work, economics, psychology, sports, science etc. and inspire our IIT Hyderabad fraternity with insights that they could induce in their lives.

The variety of extracurricular life in IITH gives everyone an opportunity to find worthwhile and meaningful activities to pursue throughout their stay on campus. NSS at IIT Hyderabad is aimed at providing each student with a significant context in which he/she can reach a deeper understanding of social reality in India today. IIT Hyderabad's Sports is one of the more brilliant attractions of this campus life. Our fiery enthusiasm and zeal are embodied in our motto, "The name on the front of a jersey is more important than the name on the back". Sports facilities at IITH include a football ground, cricket ground, a hockey ground, a well-equipped swimming pool, floodlit synthetic courts for basketball, badminton, tennis, and multiple courts for volleyball. Facilities for indoor games like table tennis, caroms, and chess are also available. The recreational room homes a perfect environment to vent out stress by providing indoor team games foosball, pool, snooker and has a television available for personal use too. The calendar of IITH is packed with events like Fresher's Interaction Sports Program during the first month of every year, Inter-Departmental Sports Meet where the students play for their department's glory, regular friendly matches with other college teams, and most importantly the Inter-IIT Sports Meet. IITH made its mark in Inter-IIT sports history by becoming the first of the newer IITs to win a medal at the Inter-IIT Sports Meet, winning a Bronze Medal in Football. All-in-all, we believe that

physical and mental health are an equally crucial part of one's success and IITH thrives to inculcate this culture in every individual.

Location and Accessibility

IITH campus at Kandi is ahead of Patancheru on NH9 towards Sangareddy and is about a 60-minute drive from the Rajiv Gandhi International Airport, Hyderabad.

Reaching IITH

By bus from:

1. Secunderabad Railway Station (50 km): via Begumpet, S.R.Nagar, Kukatpally, Miyapur, Chandanagar and Patancheru proceeding west on NH 9 past BHEL to Isnapur and continue on Mumbai high until you hit Kandi village.
2. Nampally Railway Station (55 km); via Mehdipatnam, Lingampalli, Patancheru proceeding west on NH 9 past BHEL to Isnapur and continue on Mumbai high until you hit Kandi village
3. Kacheguda Railway Station (60 km): By bus via Nampalli, Mehdipatnam, Lingampalli, Patancheru proceeding west on NH 9 past BHEL to Isnapur and continue on Mumbai high until you hit Kandi village
2. Mahatma Gandhi Bus Station (Afzalgunj) (75-90 min): via Mehdipatnam, BHEL, Pathancheru, Isnapur and Rudraram to reach IIT Hyderabad permanent campus in Kandi.
3. Jubilee Bus Station (75-90 min): via Begumpet, S.R.Nagar, Kukatpally, Miyapur, Chandanagar and proceeding west on NH 9 past BHEL, Patancheru to Isnapur and Rudraram.

By MMTS (local train):

Board the MMTS local train bound for Lingampalli, get off at Chandanagar (2nd last stop), walk to the Mumbai highway (500-600 MTS), take bus to Patancheru and follow the above route.

By Metro:

Board metro bound for Miyapur, get off at Miyapur, take a bus to Lingampalli, follow the above suggested route to IIT Hyderab

Indian Institute of Technology, Hyderabad (abbreviated **IIT Hyderabad** or **IITH**) is a [public technical research university](#) located at Kandi Village of outskirts of the Sangareddy in [Sangareddy district](#) in the Indian state of [Telangana](#).^[1] As with all [Indian Institutes of Technology](#) (IITs), IIT Hyderabad is an [Institute of National Importance](#).

IITH was founded in 2008.^[2] It has around 4,200 students (1,760 Undergraduate, 1,280 Masters and 1,160 PhD students) with 303 full-time faculty members as of 15 Jul 2023.^[3]

History^[edit]

Main article: History of Indian Institutes of Technology

IIT Hyderabad was established by the [Ministry of Education](#), Government of India under the [Institutes of Technology \(Amendment\) Act, 2011](#). The Act was passed in the [Lok Sabha](#) on 24 March 2011^[4] and by the [Rajya Sabha](#) on 30 April 2012.^[5] It was set up in technical and financial assistance from [Government of Japan](#).

IIT Hyderabad began functioning on 18 August 2008 from a temporary campus in [Armoured Vehicles Nigam Limited](#), with [Prof. U. B. Desai](#) as the founding director. In July 2015, it moved to its ~600-acre permanent campus at Kandi, [Sangareddy](#). At present, Prof B S Murty is the Director of IIT Hyderabad. It is close to the [outer ring road](#)^[6] and located on [NH-65](#).

Campus^[edit]

The IITH campus is on a land area of 576 acres (234 ha). Despite being called IIT Hyderabad, its campus is about 60 km from main Hyderabad city. The academic building is designed by New Delhi-based ARCP and hostels, Lecture Hall and academic departments by Pune-based acclaimed American architect, [Prof. Christopher Charles Benninger](#). This organic campus is divided into clusters of buildings being completed in phases starting in 2011. The campus is one of India's best examples of [energy efficient](#), [carbon neutral](#) and [sustainable architecture](#). The design grew out of local weather conditions and utmost care to enhance learning. The graduate and post-graduate programs are separated, student and teacher housing is divided, and girls and boys hostels are segregated for a [pluralistic environment](#).

The 25 lakh square feet of buildings in Phase 1A; 3 academic blocks and 10 functioning hostel buildings (each with a capacity of 200) were completed in March 2019.^{[7][8][9]}

Hostels^[edit]

Dorm rooms at IIT Hyderabad are traditional one-person rooms. Most students reside in the ten hostel buildings on-campus. Two out of the ten hostel buildings accommodate female students exclusively. Dining facilities are located in centralized halls. Students are assigned specific rooms at the time of admission where they will live, usually for the remainder of their stay at the institute. Students are provided with complimentary high-speed fiber optic internet for academic and personal purposes.

IIT Hyderabad Research Park

In 2018, Government of India sanctioned Research Park to some IITs in which IIT Hyderabad got its place. IIT Hyderabad Research Park is a self-reliant team endorsed by IIT Hyderabad and its alumni. The IIT Hyderabad Research Park promotes the betterment of research and development by the institute through friendship with industry, helping in the advancement of modern ventures, and build-up economic development. The IIT Hyderabad Research Park

assists organizations with a research target to set up an infrastructure in the park and advantage the expertise available at IIT Hyderabad.

IIT Hyderabad Technology Research Park (TRP) with a total Built-up area is 19,560 square meters was recently (On 4 February 2022) inaugurated by Srivari Chandrasekhar, secretary, Department of Science & Technology, Government of India (Goi).

Organisation and administration[\[edit\]](#)

Governance[\[edit\]](#)

See also: [Indian Institutes of Technology](#) § [Organisational structure](#)

All IITs follow the same organization structure which has [President of India](#) as visitor at the top of the hierarchy. Directly under the President is the IIT Council. Under the IIT Council is the board of governors of each IIT. Under the board of governors is the director, who is the chief academic and executive officer of the IIT. Under the director, in the organizational structure, comes the deputy director. Under the director and the deputy director, come the [deans](#), heads of departments, registrar.

Departments[\[edit\]](#)

IIT Hyderabad has 18 departments:^[10]

Engineering[\[edit\]](#)

- Artificial intelligence
- Biomedical engineering
- Biotechnology and Bioinformatics^[11]
- Chemical engineering
- Climate change
- Civil engineering
- Computer Science and Engineering
- Electrical Engineering
- Engineering Science
- Heritage Science and Technology
- Materials Science and Metallurgical Engineering
- Mechanical and Aerospace Engineering

Science[\[edit\]](#)

- Mathematics
- Physics
- Chemistry

Liberal Arts, Design, and Management[\[edit\]](#)

- Liberal Arts

- Design
- Entrepreneurship and Management

Research and industrial consultancy[edit]

IIT Hyderabad has 110 laboratories on the campus, of which 50 are exclusively for research. Over 80% of the faculty has either one sponsored research project or a consulting project. There is an emphasis on innovation, with more than 7,246 research publications and patent disclosures, 1,668 sponsored/consultancy projects, and industry collaborations.

IIT Hyderabad is involved in the DISANET project for disaster mitigation, an Indo-Japanese collaboration.^[12]

IIT Hyderabad has also been involved with India's first 5G patent^[13] removing fluoride from water using naturally occurring *Jamun* seeds,^[14] developing a constant drug delivery system for the body through skin patch^[15] and other research projects.

Inter-disciplinary centres[edit]

- Design Innovation Centre
- Centre for Cyber Physical Systems and IoT
- Teaching Learning Centre (TLC)
- Tinkerer's Laboratory – variety of scientific instruments including scientific instruments, electronic components, 3D printers, CNCs, workstations etc.

Incubation centers[edit]

- iTIC Incubator at IIT Hyderabad
- Center for Healthcare Entrepreneurship
- Fabless Chip Design Incubator

Academics[edit]

IIT Hyderabad offers BTech and MTech degrees in ten disciplines of Engineering, B Des and M Des degree in design and MSc degrees in science. In 2019, the institute started offering M. A. in Development Studies. The institute also offers PhD across all disciplines of engineering, sciences and liberal arts. At the institute, every semester, undergraduate students have the option to take courses in liberal arts and creative arts such macroeconomics, introductory psychology, introduction to the Japanese, French, or German language, introduction to carnatic or western classical music, theater, pottery and ceramics and Madhubani painting. It uses a Fractal Academic System, involving continuous evaluation of students, and more choices on subject they want to pursue outside their core area.^[16]

Admission[edit]

Admission to BTech programs is through the [Joint Entrance Examination – Advanced](#) for 285 seats.^{[17][18]} Among all the IITs, [IIT Kanpur](#) and IIT Hyderabad had all their seats taken between 2013 and 2017.^[19]

Admission to the B.Des program is through the Undergraduate Common Entrance Examination for Design (UCEED).^[20] The B.Des program started at IIT Hyderabad from August 2019.^[21] with 10 seats.^[22] All qualified candidates with a valid [Common Entrance Examination for Design](#) (CEED) score become eligible to apply for M.Des admission.

Admission to MTech programs requires BTech/B.E. degree or equivalent in the respective or allied areas and possessing a [Graduate Aptitude Test in Engineering](#) (GATE) score. Admission to the MSc program requires BSc or an equivalent degree with 65% for GE/OBC, 60% for [SC/ST](#) or equivalent in the respective or allied areas and possessing a valid Joint Admission Test to MSc (JAM) score. Admission to the [M. A. Development Studies](#) program also requires an undergraduate degree and candidates must clear the entrance exam conducted by the institute.

Admission to PhD Program requires either [BTech/GATE](#) qualification for engineering departments with a good academic background or [MTech/GATE](#) qualification for engineering departments or [National Eligibility Test \(NET\)](#) qualification for Science departments.

Rankings[edit]

University and college rankings

General – international

[QS \(World\) \(2023\)](#)^[23] 581-590

[QS \(Asia\) \(2023\)](#)^[24] 249

General – India

[NIRF \(Overall\) \(2023\)](#)^[25] 14

[NIRF \(Research\) \(2023\)](#)^[26] 14

Engineering – India

IIT Hyderabad was ranked 581–590 in the world by the [QS World University Rankings](#) 2023 list;^[23] it was also ranked 249 in Asia in 2023.^[24]

In India, IIT Hyderabad was ranked 8 among engineering institutes by the [National Institutional Ranking Framework](#) in 2023^[27] and 14 overall.^[25] IIT Hyderabad is also ranked the Top-3 institute as per NIRF (Innovation)/ formerly known as ARIIA, released by the Ministry of Education, Innovation Cell.^[28]

Student life^[edit]

Elan & ηVision^[edit]

Elan & ηVision, is the annual techno-cultural fest of IIT Hyderabad, and the largest college fest in South India.^[citation needed] The first edition of Elan started in 2009. The fest takes place in the beginning of the year, in either January or February. IIT Hyderabad also hosted ηVision, an annual inter-institute technical festival, since 2011. Since 2016, both events have been merged into a single annual fest called Elan & ηVision.^{[29][30]} The fest attracts a footfall of around 15K spread across 400+ colleges and hosting 60+ events. The pronites are the star attractions of Elan & ηVision, drawing thousands of footfall. The previous editions of the fest have seen shows by Shirley Setia, Benny Dayal,^[31] Nikhil Chinapa,^[32] Gajendra Verma, Kailash Kher, Darshan Raval, Rave Radio, Divine (rapper), Zakir Khan (comedian), and numerous other artists. Each year the fest also promotes a social cause to bring awareness and bring about reforms. The 9th edition was graced by Vijay Deverakonda, as he promoted social cause campaign of an eco-friendly world.^[33] The fest has also seen Ira Trivedi, Amala Akkineni, S. P. Balasubrahmanyam, and many more for various talk shows. Elan & ηVision is a platform to showcase talents across multiple spectrums, with several events like Cryptex, FMI, Manthan, Elan-e-Jung, Breakfree, Quizzes, Robo Soccer, Enigma, Battlebots, etc.

Indian Institute of Technology Indore

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	Indian Institute of Technology Indore Simrol, Khandwa Road Pin code 453 552, Indore (MP) India
Contact Person For Admission:	Assistant Registrar, Academic Affairs
Designation:	Assistant Registrar
Email:	araa@iiti.ac.in
Alternate Email:	manageracademic@iiti.ac.in
Phone Nos:	91-731-6603150,731-6603405,731-6603128
Fax No:	91-731-6603121
Mobile No.:	

About the Institute

Having laid its foundation on 17 February 2009, IIT Indore, an Institute of National Importance, has carved a niche in Academics and Research & Development. Since its inception, the Institute has grown multidimensional in fields of Engineering, Basic Sciences and Social Sciences. The focus of the Institute has always been to mold raw minds into Researchers and Innovators.

The Institute is creating vibrant and expanding academic programs by incorporating lot of flexibility, making it relevant to the society and introducing new programs. Under National Education Policy 2020, the Institute is constantly introducing several new concepts of learning, such as Do-It-Yourselfs, project-centric learning, and a credit bank, where the students can accrue credits during their academic journey.

Research has been the forte of the Institute and it is committed to contribute to society and help people at the bottom of the pyramid by making the research relevant to them. Though IITs are known for technology, this Institute is equally focused on humanities too and is working on the application of technology in the humanities domain by starting 'Jai Prakash Narayan National Centre for Excellence in Humanities'. It is also working towards creating a Translational Research Ecosystem – a Lab-to-Land system that converts research to technology.

The Institute is preferred choice to many industries, companies and PSUs for placement owing to the bright minds carefully nurtured for research and innovation. Core profiles in the Computer Science, IT, Software, Machine Learning/Data Science domains have been the major highlights of the Campus Placements in the recent past. While on the domestic front, companies like Goldman Sachs, Infurnia, DEShaw, Razorpay, Oracle, Amazon, Jio Platforms, Walmart, Siemens made the highest number of offers, well-paid international offers were made by Rakuten Mobile Inc., Accenture Japan, Money Forward Inc. and Chowagiken Pvt. Ltd.

Fortified with state-of-the-art Teaching and Research Labs, the Institute widened its vision and forayed into innovation and entrepreneurship. IIT Indore Advanced Centre for Entrepreneurship (ACE) is a Section 8 company focusing on start-ups and incubation-related activities. Presently, 20 startups are incubated, however, the total number is 40 since inception. Facilities include seed capital, physical space, coaching, common legal, administrative & financial services and networking connections.

IIT Indore has grown exponentially by way of research and academic endeavors as one of the top-ranking institutions in the country. In the India Ranking-2023 released by National Institutional Ranking Framework (NIRF), IIT Indore has been ranked 14th amongst

all engineering institutions. The Institute is at a remarkable position even in the global rankings and is ranked at 396 in the QS ranking in the 2022. _

The Institute has major plans and thought processes underway, for the expansion of the teaching and research activities and making them more relevant to industries and society. There are plans for new UG as well as PG academic programs. It is also planned to develop new Industrial Research Park, where industries can cross-over and bring them closer to the Institute.

Fee Structure

Fee Structure for Indian Students

Particular	Amount (for General, EWS and OBC students)	Amount (for SC, ST and PwD students)
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A	Tuition Fee	₹ 100,000	₹ 0
B	Group Insurance Premium per semester	₹ 1,600	₹ 1,600
C	Per Semester Registration fee	Examination Fee Registration Fee Gymkhana Fee Medical Fee Student Benevolent Fund Fee Student Welfare Fund (per semester from AY 2019-20) Laboratory/ Research facilities fee	₹ 500 ₹ 500 ₹ 1,500 ₹ 1,500 ₹ 300 ₹ 500 ₹ 1,500 ₹ 6,300
D	One Time Admission Fee	Admission Fee Grade Sheets Fee Smart Card fee	₹ 1,000 ₹ 400 ₹ 400

	Medical Examination Fee	₹ 400	₹ 400
	Degree Certificate Fee	₹ 400	₹ 400
	Convocation Fee	₹ 3,000	₹ 3,000
	Alumni Association Membership Fee	₹ 1,500	₹ 1,500
	Training and Placement Fee	₹ 1,000	₹ 1,000
	Student Welfare Fund	NA	NA
	Total D	₹ 8,100	₹ 8,100
E Refundable Security Deposits	Institute Security Deposit		
	Security Deposit for Library	₹ 10,000	₹ 10,000
	Security Deposit for Dining Facility		
	Security Deposit for Accommodation		
	Total E	₹ 10,000	₹ 10,000

F	Fee for Accommodation and Other Facilities Provided in it (per semester) *	Rent	₹ 16,000	₹ 16,000
		Electricity and Water Charges		
		Facility Charges		
		Total F	₹ 16,000	₹ 16,000
G	Semester Mess Advance per semester (tentative)		₹ 17, 550	₹ 17, 550
H	Total (A + B + C + D + E + F + G)		₹ 1,59,550	₹ 59,550

Fee Structure for International Students

International students including students belonging to OCI/PIO getting admission through JEE (Advanced) examinations shall be charged as under:

S No	Academic Program	Year/Semester of Admission	For the duration of 2022 Autumn Semester

			Tuition Fee (₹)	Other Charges Including Accommodation and Dining Charges (₹)
1.	BTech	2023	₹ 3,00,000	₹ 59,550
2.	Any other applicable charges as notified by the Institute from time to time.			

(The fee amount shall be payable in USD as per the exchange rate as on the date of payment)

1. Students are supposed to pay entire fee at the time of registration and no installment payment will be accepted.

Fee refund policy:

If a student who withdraws from an academic program after joining and completing registration in the academic program, only Security Deposits paid by the student in his/her academic program will be refunded.

Academic Structure

IIT Indore started B.Tech. program from the year 2009 in the Department of Computer Science and Engineering, Electrical Engineering and Mechanical Engineering with an intake of 40 in each discipline. From AY 2016-17, total number of seats in each of these three disciplines has been increased to 60. Additionally, two more BTech programs in the Department of Civil Engineering and Metallurgical Engineering and Material Science were also started with 40 seats in each Department w.e.f. AY 2016-17 onward. From AY 2023-24 four new BTech programs in Chemical Engineering (40), Mathematics and Computing (40), Engineering Physics (20) and Space Sciences and Engineering (20) are started and the total seat intake for BTech program at IIT Indore is 480.

The UG and PG curriculum of IIT Indore emphasizes on imparting strong theoretical fundamentals and giving equal importance to practical knowledge and hands-on experience to its budding engineers using inter-disciplinary, humanistic and holistic approach. Consequently, BTech students study 10-12 practical courses independently during 3-8 semesters of their program. All the students in their first year of BTech program do practical courses on Chemistry, Physics, Engineering Graphics, Computer Programming, Basic Manufacturing Techniques and Basic Electrical and Electronic Engineering along with their theory courses. Additionally, there are compulsory courses on (i) English language to help the students to improve their communication skills, (ii) Economics course to give fundamental knowledge about micro and macro-economics, (iii) Biosciences course to provide fundamental knowledge and exposure to different aspects of life sciences, (iv) Experimental Engineering Lab to impart practical training on measurement of fundamental quantities, (v) Scientific and social aspects of Environmental Studies to sensitize the students about the importance and conservation of environment and adverse effects of industrial and daily activities on it.

The Institute has revised its UG curriculum in March 2014 to enable its BTech students to make their BTech project research oriented of 6-7 months duration which can be done either outside the institute or within the institute by freeing 7th semester of BTech program from any type of coursework. The institute also provides funding to some deserving and high quality BTech projects as well as Institute awards the Best BTech Project among the graduating batch in its annual Convocation. All the elective courses in 8th semester of BTech program are open elective course enabling the students to have choice-based-credits system. Many courses are cross-listed for both PG and PhD students to enhance the interaction between the UG and PG students. The Institute started concept of Minor programs and/or additional learning in March 2014 to provide its BTech students an opportunity for additional learning and earn an additional degree by earning credits in at least five courses of a particular minor specialization in addition to BTech degree in his/her major specialization. At present minor programs are offered in Chemistry, Biosciences and Biomedical Engineering, Liberal Arts, Economics, Astronomy and Space Engineering. IIT Indore also provides an opportunity to its BTech students to convert their program into a 5 Year BTech + MTech Dual Degree program during 6th semester. French language courses are available to its UG and PG students. The institute has made special provisions for Defence Forces personnel enabling them to pursue MTech and PhD programs at IIT Indore. From AY 2018-19 IIT Indore has introduced four PG programs i.e., MSc in Astronomy in the Centre of Astronomy, MTech in Mechanical System Design in the Department of Mechanical Engineering, MTech in Metallurgical Engineering in the Department of Metallurgy Engineering and Materials Science and MS (Research) in the Department of Computer Science and Engineering, Electrical Engineering and Mechanical Engineering.

From AY 2023-24 course curriculum has again been revised based as per the mandate of NEP-2020 and following course has been added transitional training, Industrial Internship, social

internship, maker space, multidisciplinary nature and design thinking. From AY 2023-24 institute has introduced four new BTech programs:

S. No	Department	Student Intake
1	Chemical Engineering	40
2	Mathematics and Computing	40
3	Engineering Physics	20
4	Space Sciences and Engineering	20

Six New MTech programs:

S	De	S	S
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1	Co	C	1
	mp	o	5
	uter	m	
	Sci	p	
	enc	ut	

	e and En gin eeri ng	er S ci e n c e a n d E n gi n e er in g		
2	Civi l En gin eeri ng	W at er , Cl i m at e a n d S u st ai n a bi lit y	1 0	
3	Bio sci enc es and Bio me	Bi o m e di c al	1 0	

dic al En gin eeri ng	E n gi n e er in g			
4	Me cha nic al En gin eeri ng	A p pl ie d O pt ic s a n d la s er T e c h n ol o g y	1 5	
5	Civi l En gin eeri ng	St ru ct ur al E n gi n e er in g	1 0	

6	Ce	D	1
	nter	ef	5
	of	e	
	Fut	n	
	uris	c	
	tic	e	
	Def	T	
	enc	e	
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	and	h	
	Sp	n	
	ace	ol	
	Tec	o	
	hno	g	
	log	y	
	y		

In order to make global presence and for spreading the light of knowledge beyond political borders, IIT Indore has opened its doors for international applicants for pursuing PG and PhD programs from AY 2018-19 and under the Student Exchange Program. This Institute has inked MOUs with 35 foreign institutions of repute to increase the ambit of knowledge sharing.

1) Computer Science and Engineering: Department of Computer Science and Engineering offers Bachelor of Technology (BTech), MS (Research) and Doctor of Philosophy (PhD) programs. The Department adopts a modern approach to teaching wherein students are rendered adequate academic freedom to innovate and learn in the process. State-of-art facilities including the latest software and advanced hardware are available in various laboratories for use in both teaching and research. This facilitates are adequate implementation of major BTech projects and for verification and validation of research results. The course structure in the CSE Department is geared towards catering to students irrespective of their academic backgrounds in computer science. The first year of the BTech program initiates students into computer science through a basic course on Computer Programming. This course is common to students of all departments. It is followed by courses like Data Structures, Database and Information Systems, Software Engineering, Algorithms, Discrete Mathematical Structures in the second year through which students are eased into the more specialized concepts of CSE. The third year of the program exposes students to the more rigorous and 'core' subjects of computer science such as Computer Architecture, Computer Networks, Compiler Techniques, etc. Students are encouraged to work on projects in the industry and universities in India and abroad. Students are permitted to opt for 'open elective' courses from across department for a more holistic development of their understanding of engineering and technology.

2) Electrical Engineering: The Department of Electrical Engineering (EE) offers a BTech program, two M.Tech. programs specializing in Communication and Signal Processing (CSP), VLSI Design and Nanoelectronics (VDN), an M.S. (by research) program, and a Ph.D. program. Department's BTech curriculum provides exposure to various disciplines of EE, such as electrical power engineering, electronics engineering, RF & microwave engineering, and communication & signal processing. In addition to the core EE courses, the curriculum comprises advanced elective

courses in the above disciplines of EE. While most of our graduating students begin their careers in corporate companies and start-ups, others choose to pursue higher studies in top-notch institutes/universities in India or abroad.

3) Mechanical Engineering: Department of Mechanical Engineering (DME) started in 2009 and largest departments in the Institute involving 26 full-time faculty members. The Department offers various programs such as BTech, MTech, MS (Research) and PhD. Numerous sponsored candidates from industries and research organizations carry out their postgraduate studies in the department. In addition to this, the department hosts several postdoctoral fellows. Currently, the department offers three MTech programs (i) Advanced Manufacturing (ii) Mechanical System Design, and (iii) Thermal Energy Systems.

The department trains its students in all the required aspects of Mechanical Engineering throughout the span of their BTech Program. This includes the areas of specialization of design engineering, manufacturing engineering, industrial engineering and thermal engineering; it has state-of-the-art research facilities to support the academic and research programs. One of our major objectives is to provide quality engineering education with basic as well as specialized engineering training for the present and emerging requirements of the society. The department offers the curriculum that imparts technical skills, promote problem solving approaches and innovative thinking to provide technological solutions. The curriculum encourages to undertake numerous research projects for undergraduate students. Apart from the academic activities, the students of the department are encouraged to participate in various co-curricular activities.

Over the years, the department has evolved to meet the ever-increasing challenges in technology development through international/national collaborative research with financial assistance from various government/private organizations. In addition to the teaching, faculty members of the department carry out collaborative and interdisciplinary research in diverse areas. Faculty members have excellent academic credentials and have been conferred with prestigious awards at both national and international levels; organize short term courses, symposiums and conferences on regular basis._

4) Civil Engineering: Department of Civil Engineering started its Flagship Program (BTech) in IIT Indore from AY 2016-17, with initial batch size of 40 students and increased up to 53 in the AY 2022-23. The Department Offers BTech and PhD programs in different Specializations which includes Structural, Geotechnical, Water Resources and Hydrology, Environmental and Transportation Engineering. Department is going to start MTech in Structural Engineering by AY 2023-24. The Department is well equipped with functional laboratories, all-inclusive of Advanced Instruments required for the purpose of Experimental and Computational research, pertaining to each specific Domain.

Students are encouraged to work on Industry Projects and with various Research Institutes in India and abroad. The Program gives flexibility to students, to opt for elective Courses from other disciplines as well, thereby enhancing their multidimensional knowledge. The graduated students from the Department of Civil Engineering have been placed in premier companies from construction and infrastructure Industry, while there are few who are pursuing Higher Studies in Institutes of National Repute.

5) Metallurgical Engineering and Materials Science: Department of MEMS was initially started as a Center for Materials Science and Engineering (CMSE) comprising of faculty from Schools of basic sciences and engineering. Upon its progress in short period of time, the center for MSE was made into full-fledged Department from 2016.

Materials continue to play a vital role in almost every technological advancement since the beginning of civilization. The emphasis of the Department is to promote multidisciplinary research to find amicable solutions for the real-world problems and work on the cutting-edge research problems that benefits society. The key research focus of the Department is to understand the processing, structure of several classes of materials and correlate them to the properties and thus enhancing their performance.

The department has 17 core faculty members and 1 Ramanujan fellow. The faculty members of the Department work over wide research areas, from conventional metallurgy to modern materials science and engineering. The vision of the Department of Metallurgy Engineering and Materials Science (MEMS) is to be recognized as a world-class teaching and research center dedicated to interdisciplinary research in metallurgy and materials science & engineering. Our goal is to educate and mentor the next generation of engineers, scientists, and entrepreneurs in order to contribute to the economic and social development of India & World. The Mission of the Department of Metallurgy Engineering and Materials Science (MEMS) is to:

- Educate our students in fundamental-to-advanced topic in materials & metallurgical engineering to enable them with necessary skills to succeed in academia and industry.
- Innovative research focused on design, processing, characterization, and application of novel materials.
- Encourage innovation & entrepreneurship, patents, and technology transfer by collaborating with industries.
- Engage with broader community via outreach programs to promote science & technology awareness

6) Chemical Engineering: Chemical Engineering is one of the most important disciplines of engineering and is at the foundation of the modern way of living. Everything we use from computers and phones to cosmetics, foods, and pharmaceuticals requires inputs from chemical engineers at some point in their production and recycling. Chemical engineers are actively involved in addressing some of the most important global challenges facing mankind today, from climate change and sustainable energy to affordable and effective healthcare. With strong foundations in basic sciences, Chemical Engineering is inherently multidisciplinary and chemical engineers are increasingly solving inter and trans-disciplinary problems spanning multiple scales and domains. There is an ever-increasing demand in recent years to understand and control molecular and macroscopic processes in biological systems. Chemical Engineers have made important contributions to society. The breadth and versatility of their training will continue to open many new opportunities for chemical engineers in the future.

IIT Indore is excited to offer a 4 years UG program in Chemical Engineering starting in the academic year 2023 in the newly established Department of Chemical Engineering at IIT Indore. The future-oriented curriculum of the program is designed with the help of leading academic and industry national and international experts and is geared to create engineers who are world leaders in innovation and solve the problems of our society. IIT Indore offers a very diverse engineering curriculum following the National Education Policy (NEP 2020). The Department courses encompass a strong foundation in core courses and elective courses in the emerging areas of chemical engineering. Apart from the department courses, the students will have an opportunity to take a wide range of institute electives offered by other departments and pursue a minor degree in other departments. The mission of the department is to train engineers and scientists who will work on cutting-edge problems in chemical engineering and provide solutions that benefit society and

help in the progress and welfare of our country and the world. Join us at IIT Indore and be a part of a community of passionate individuals who are committed to making a difference in the world.

7) Space Science and Engineering: Department of Astronomy, Astrophysics and Space Engineering (DAASE), established in 2015, is a unique interdisciplinary department and the first of its kind in the IIT system. It offers research and training opportunities in a wide range of domains starting from Astronomy to Space Engineering. Apart from a well-established PhD programme (since 2016), this is the only department in the IIT system which offers an M.Sc. in Astronomy (since 2018). Additionally, the department offers MTech in Space Engineering and MS (Research) in Space Science and Engineering degrees (since 2020). The department presently has ten faculty members, who are engaged in cutting-edge research in various domains of Astronomy and Space Sciences, that include national and international projects e.g. Square Kilometer Array, Thirty Metre Telescope, Aditya-L1, Astrosat etc. The department is well endowed via funding from various external sources e.g. grants from DST FIST, CRG, SRG; DoES; DRDO; ISRO, CSIR, DAE etc and various industries. The faculties and students have strong research collaborations with various renowned universities and laboratories around the world. Most of the alumni of the department are either pursuing research in national and international universities or have been absorbed in various relevant industries.

In today's world, Space is not just about human curiosity in knowing what's beyond. Space has turned out to be a frontier essential to address many current issues and future prosperity. It includes the study and prediction of climate change, communication, navigation, defence, security, survey, agriculture, environment, ecology, and astronomy. The space industry in India is growing and it holds the prospect for young professionals with talent, relevant skillsets and enthusiasm. Hence, it is essential to develop technology and trained human resources to meet the enormous requirement in this domain both in the government and private sectors.

With the above vision in mind, DAASE is starting a unique interdisciplinary BTech program in Space Science and Engineering (SSE) in July 2023, which envisions developing skilled human resources to meet the demand of the booming space and allied sectors of India and the world. Students of this program can specialize in one of the following domains with curated elective courses and a semester-long research project - Space Instrumentation: Detectors & Payloads, Imaging & Data Analytics, Remote Sensing & Atmospheric Engineering, Astronomy & Astrophysics. BTech in SSE students will be exposed to cutting-edge research and tech development in the sectors of payloads, small satellites and detector design; data analytics; imaging; high-end numerical simulations; with applications targeted towards climate change, sustainable development, ecology, earth observations, agriculture, defence, communication, navigation and astronomy.

8) Mathematics and Computing: The Department of Mathematics at IIT Indore was established right from the inception of the institute in 2009. It has faculty members from diverse research areas of Pure and Applied Mathematics, such as Algebra, Applied Mechanics, Complex Analysis, Computational Seismology, Differential Equations, Dynamical Systems, Geometric Function Theory, Harmonic analysis, Kinetic theory, Machine Learning, Mathematical Modelling, Mathematical Biology, Modal Logic, Number Theory, Numerical Functional Analysis, Numerical Linear Analysis, Optimization, Radon Transform, Probability and Statistics, Rough Set Theory, Special functions, Statistical Inference, and Wavelet Analysis. The department introduced Ph.D. and M.Sc. programs in 2010 and 2015, respectively. __

The department offers a BTech program in Mathematics and Computing from AY 2023-24, with an initial batch size of 40 students. The program allows exploring courses in computer science and mathematics. It also gives students the flexibility to opt for Elective Courses from other disciplines,

thereby enhancing their multidimensional knowledge. The graduated students will have career opportunities as academicians, bankers, business analysts, computer scientists, computational engineers, data analysts, economists, financial analysts, information technologists, programmers, statisticians, system analysts, etc. This degree will also enable interested students to pursue higher studies in various branches of Science & Technology, including Computer Science & Mathematics._

The department has several projects funded by national and international agencies. The department also has the DST-funded Bhaskaracharya Mathematics Laboratory and Brahmagupta Library. The department is actively conducting several events like weekly seminars, the Ramanujan-Hardy lecture series, national/international workshops, and conferences.

9) Engineering Physics: The Department of Physics was established in 2009, right at the inception of IIT Indore. We comprise of faculty members from diverse research areas such as experimental condensed matter physics, complex systems and nonlinear dynamics, experimental and theoretical High energy Physics. We have successfully run two graduate programs namely, PhD and MSc in Physics with our alumni getting high education opportunities in various reputed institutes/universities around the world and some entering jobs too. Our Master's program since 2013 is unique in its research focus as it provides opportunity to do a year dedicated long research project._

We initiate a B. Tech program in Engineering physics from Academic year 2023-24 with a carefully curated curriculum by subject experts that includes undergraduate research opportunities, many laboratory courses for plentiful hands-on training and a variety of electives across departments to improve skill sets in demand. This program is intended to train students for career opportunities in optoelectronics and photonics, energy conversion and storage, solar cell technology, spintronics and memory devices, quantum computing and technology, high energy physics, nuclear science and engineering, medical physics, data Science and detector technology.

More information related to academics can be found at <https://academic.iiti.ac.in/>

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Rules For Change Branch

After successful completion of the first two semesters, student can apply for change of branch, subject to the fulfillment of the following conditions:

- I. Students without any non-credit earning grades (i.e. FR, XX & NP) and having CPI > 6.5 for students of GEN and OBC-NC categories and CPI>6.0 for students of SC and ST categories are eligible to apply and can give their choices.

II. Top 1% students of the total students who complete first year of study will be eligible for change of branch without any constraints.

III. For other students change will be permitted strictly on merit cum preference basis.

IV. The request for change (in order of merit cum preference) from branch A to branch B will be considered if:

(a) Number of transfers to branch B does not exceed 10% of its sanctioned strength inclusive of two vacancies for meritorious eligible students of SC and ST categories.

(b) Number of students on roll in the branch A does not fall below 85% of its sanctioned strength.

(c) The request of Student 1 will be re-considered (again in order of merit cum preference) if student 1 does not violate point (b) above due to another student getting transfer to branch A.

(d) If student 1 is not permitted to change from branch A to B (due to (b) above), any other student in any branch with CPI less than Student 1 will also not be permitted to change to branch B.

V. Branch Change will be allowed only once at the beginning of the second year of B Tech programme. No application for change of branch during the subsequent academic years will be entertained.

VI. If there is a tie between two students then the student having more number of higher grades will have higher merit.

Faculty

Being the hub of research and development, IIT Indore has around 181 highly motivated faculty members. They are the mentors, philosophers, and guides to the students. As faculty advisors, they are the local guardian to the students and ensure that the students receive a conducive environment to explore the sea of knowledge with no distraction. With inter-disciplinary approach, they will provide a new arena to research and innovation to the students. The industry-oriented research has led to the invention of new products, processes, and technologies. Large number of projects have been completed and ongoing in the Institute from various funding agencies.

Having more than 90 National and International collaborations/MoU's, the faculties are actively engaged with the bests in the field globally, thus providing formative exposure to the students. They have published books in the reputed international and national publishers while some are members of Editorial Boards of the reputed international and national journals. They are involved in the effective conduct of the tutorials and laboratory classes. Eminent professors from National and International Institutes are also invited to augment the existing academic resources and to interact and share their knowledge & wisdom with the students.

Facilities

Campus: Campus of IIT Indore is located at Simrol located on Indore-Khandwa state highway. The campus is spread over 501.42 acres of land and is about 20 km from Indore city centre. The mandate of construction of 2,21,000 Sqm. of area given by Ministry of Education, Govt. of India has been completed. This includes construction of Phase-I & Phase-II construction of the campus. The existing infrastructure includes 12.50 km long Boundary wall, Entry gates, Central Workshop, Kendriya Vidyalaya, Hall of Residence (hostel), Studio apartment, Academic

POD buildings, Sophisticated Instrumentation Centre (SIC), Sewage Treatment Plant, Water Treatment Plant, Computer Centre (CITC- Hub building), Cafeteria, Main Receiving Station, HVAC plant, Director's office-cum-residence, Health Centre, Learning Resource Center (Library), Indoor Sports Complex including badminton courts, basketball court, squash court, gym and swimming pool. Various outdoor sports facilities including basketball courts, football ground, cricket ground etc., Abhinandan Bhawan (Administrative Building), Central Dining Facility, Lecture Hall Complex, Nalanda Auditorium and Guest House are completed and operational. The auditorium of the institute has been awarded a certificate of merit (Third Prize) of best completed projects of Central Public Works Department on 168th Annual day of Central Public Works Department on July 12, 2022.

The Institute gets water supply from Narmada Kshipra Simhastha Link Project. The campus has branch office of Canara bank with, ATM facility, ATM facility of State Bank of India and HDFC are also available in the campus. Post office, Shopping Centre under the aegis of IIT Indore Cooperative Society has been made functional to cater the daily needs of residents. There are various other facilities available for the campus community like more than one catering services in Central Dining Facility, different cafeteria like Tea Post, Noors' Kitchen, Aladdin, Bakelogy, Electrical zone shop, Photocopy shop in Library Building, Laundry, Saloons, Fruit shops, Vegetable shops, Juicilious, Sainath Juice Centre, My village coffee shop, Amul Parlour, Daily Needs shop etc.

Institute has complete modern academic facilities including modern classrooms with sophisticated audio-video teaching aids, computer labs, various teaching labs having state-of-art sophisticated equipment and instruments and ever-expanding Central Library, Virtual classroom (VCR) under NKN project with state-of-art video-conferencing facilities. The classrooms with 150 plus seating capacity are air conditioned. The institute has also acquired state-of-art research equipment and facilities to cater to the research interests and needs of its PhD students, PG students, post-doctoral fellows and faculty members also to attract best of the PhD students and faculty members. Institute has some centres of excellence established under FIST funding from DST of Govt. of India namely Centre of Excellence (CoE) in Gear Engineering and Power Transmission Grid while establishment of other CoE are under consideration. The Institute has also established "J.P. Narayan Center of Excellence in Humanities and Social Sciences". The Institute is also in the process of development of "Rajratan Center of Excellence".

Learning Resource Center (Central Library): The Learning Resource Center provides students and faculty members with resources for their varied needs, a comfortable and peaceful environment conducive to study including wi-fi enabled and air-conditioned reading rooms and helps in locating and using the resources. The resources of the Learning Resource Center (LRC) include books, e-resources, magazines, and newspapers. The textbook collection in the library provides vital support for ongoing UG, PG and PhD programs. The library has also developed a fine collection of books on literature and English language, and also sports, biographies, and general interest titles. At present, the library has more than _38,600+ plus books in its collection. The Magazine and Newspaper section includes all prominent technical and general magazines and local and national dailies. The Library provides access to many full-text and bibliographic e-resources from reputed publishers such as Elsevier, Springer, Taylor & Francis, Wiley, Nature, American Chemical Society, Royal Society of Chemistry, American Institute of Physics, American Mathematical Society, and many more. The library has also e-books from different publishers. The LRC regularly organizes demonstrations and training programs for various e-resources to facilitate maximum utilization of these resources. The LRC is in the process of introducing

various new services to users in addition to the Lending Facility, Reading Room Facility, Renewals, Reservations, etc. The library has automated its services with the help of an integrated library management software 'Koha' to provide fast and effective library services to users including OPAC (Online Public Access Catalogue) facility. The LRC Orientation Classes are held for new students at the beginning of the new academic year, where they get to know about the library collection, services, rules and regulations, and are introduced to the LRC team.

Online Information Resources are vital for academic and research institutes in today's knowledge economy. The library provides its users access to more than 8000+ e-journals. In addition to this, the Library provides access to bibliographic databases such as SciFinder Scholar, Scopus and MathSciNet, among others. The Reading Hall provides a peaceful environment conducive to study.

The IITI Institutional Repository has been created by the Learning Resource Center to showcase, organize, share, and preserve the scholarly output of Indian Institute of Technology Indore. The Repository is designed to facilitate scholarly communication by providing access to the knowledge resources created by IITI and preserving the same for future generations of scholars.

Medical Facilities: IIT Indore has well equipped Health Centre with skilled and dedicated medical staff including medical officers and visiting specialist consultants. The health centre provides outpatient, emergency services and inpatient care for minor ailments. It has physiotherapy facility and an in-house outsourced diagnostic laboratory. IIT Indore has MOU with major hospitals of Indore city to cater to the emergency and specialized medical requirements of the students, employees and their dependents. Inpatient facility in empaneled hospitals is provided to students through group Mediclaim insurance policy.

Health Centre provides emergency medical services 24x7. For medical emergencies, an Advanced Life Support ambulance is available for shifting of patients to specialty the Hospitals in Indore city.

Hall of Residence: The Institute has four hostels (CV Raman, APJ Abdul Kalam, Vikram Sarabhai and Homi Jehangir Bhabha) for male students and one hostel (Devi Ahilya) for female students in the campus that can accommodate all students. In each hostel, there are common areas for recreational activities along with well-furnished rooms of 6 BHK flat having 6 rooms, small kitchen, two washrooms, and two toilets with each room with single occupancy. Additionally, it has modern furniture such as cot, chair, study table, Almirah, centralized hot water supply and centralized R.O water facility in kitchen area so that the students get home environment. A great deal of care is taken to provide excellent drinking water facilities in all hostels. Each hostel has common facilities: TV, indoor, recreation, games and for security concerns a first-aid box and fire extinguisher is provided. Washing Machines are provided in all the hostels wherein residents can also avail the laundry facility in the campus. The hostel area also includes Printing and Photostat facilities and a few shops that cater to the basic needs of the students. Patisserie cum coffee shop, general store, gift shop, juice shop, saloon, and ATM are a popular location for students. Food Court is another place students frequently chat and satiate their taste buds.

Each hostel has a Warden, who is a faculty member, and an Associate Warden. The Warden and Associate Warden, with the help of the office staff, handle all administrative work concerning the hostel and security officers are available for their security and care during emergencies. The Hostel Council consisting of the Warden and student secretaries, elected by the residents of each hostel, decide issues pertaining to the hostel.

Students at IIT Indore also have access to gymnasium facilities on campus. Students' daily lives are enriched by the lush, green campus of IIT. The campus life is vibrant and enchanting with all the amenities for recreational activities provided to the students. Here at IIT Indore, students rejuvenate their hidden talent and relive their hobbies. Hostel life is more than just books and the rooms, it's about sharing, caring, exciting events and a home away from home with new family.

The Institute has a spacious area of central dining hall, Students are provided four meals a day: Breakfast, Lunch, High Tea and Dinner. Two or more messes are always serving at the central dining hall located near to the Hostel. Menu and quality of food are monitored by a students' mess committee under the supervision of the Dining Warden.

Transportation: The institute has a fleet of 4 buses of various capacity for facilitating the students, faculty and staff to commute from place to another within and outside the campus. In addition to that Institute have 11 Green Vehicles with capacity of 4, 6 and 14 passengers to commute within the campus by running these vehicles green campus concept is being observed. The institute also provides transport facility on Saturdays and Sundays which does not include gazette holidays, for visiting the city to meet their marketing needs. The facility of institute vehicles is also extended to the students for outreach excursion/sports/cultural activities.

Student Life at Institute

Student Life at IIT Indore comprises a judicious balance between different academic and extra-curricular activities. Besides the regular academic activities associated with the respective degree program, there are many engaging co-curricular activities that students indulge in. These include BTech Project Work or BTP in the 7th semester, projects as part of different courses, industrial visits, etc., that bolster the student's knowledge, experience, and personality. Extra-curricular activities of students are driven by a systematic structure of clubs within the institute that channel these activities. Some such clubs are the Literary Club, the Dance Club, Aaina (Drama Club), the Music Club, the Programming Club, the Electronics Club, Cynaptics (AI/ML Club), the Robotics Club, the Aeromodelling Club, the Quiz Club, Prakriti Wildlife Club, the Gaming Club, etc. that contribute to the all-round development of the students. Another notable cell for the students is the Entrepreneurship Cell which encourages students to come up with 'out of the box' ideas and provides a 'seed' infrastructure for realizing the same. Consequently, many start-ups have been initiated by IITI students. Faculty members at IIT Indore are widely known to be not just wonderful teachers who are open and easily approachable but also outstanding researchers in their respective fields. This, coupled with IIT Indore's very healthy student-to-faculty ratio, provides students with the best environment possible for learning and overall development. Many BTech students work in association with the professors working in their interested field and get exposed to some latest ideas and innovations in that field. Many BTech students have published research papers during their courses.

There is an active social welfare initiative taken up by students of IIT Indore called 'Avana' that plays a significant part towards the welfare of underprivileged people in and around Indore. This includes conducting teaching activities for rural children, distributing basic clothing and blankets through a

donation mechanism, conducting blood donation camps, and, more recently, developing educational content such as educational videos to benefit the rural folk.

Students at IIT Indore also participate in many technical competitions, namely the BAJA competition (which includes the design and development of an 'all terrain' vehicle with optimal costs and resources), Robocon (comprising design and development of innovative robots), the ACM ICPC (colloquially known as the 'Olympics of Programming' where IIT Indore has regularly featured and won accolades), Boeing National Aeromodelling Competition, tech fests organized by other IITs, etc. IIT Indore bagged the 6th position at Tech Meet 2023, organized this year by IIT Kanpur, where all IITs compete in various technical problem statements. Students bagged medals in problem statements from every field of tech, be it hardware, product development, AI/ML, etc.

A robust coaching structure is available at IIT Indore for various sporting activities, comprising Cricket, Basketball, Football, Swimming, Athletics, and others. IIT Indore regularly participates in several sporting events, including the annual Inter-IIT Sports Meet, and its performance is improving with every passing year. The chess team won silver with an overall rank of 12 among the participating IITs. Sports Council at IIT Indore organizes many indoor & outdoor events like Sports Fests, Chess Tournaments, Cycling Competitions, Yoga Sessions, Marathon races & Challenge Runs, tournaments for cricket, basketball, throwball, dodgeball, badminton, volleyball, football, Athletics, swimming, etc. We also collaborate with local clubs and institutes to organize matches in different sports. In addition, students also participate in a lot of cultural competitions within the institute, like IBCC (Inter Branch Cultural Clash), where students from different branches compete to bring 'glory' to their branch and T vs M, which is a cultural competition between IIT Indore and IIM Indore. The performance in Cultural Meet is also improving with each passing year. This year our team stood third in Music Band performance, with an overall rank of 12.

Fluxus, IIT Indore's annual Techno-Cultural festival, is Central India's largest and hosts some of the country's biggest names in music, science, and literature. Quite a few cultural and technical events are organized around the festival, and the institute sees participation from students from all over the country.

Financial Assistance

Following scholarships to BTech students at IIT Indore:

1. Exemption from payment of Tuition fee for SC, ST and PwD students.
2. Remission of tuition fee to the economically weak students as per MoE guidelines.
3. Interest-free education loan for the students whose parents' incomes is in the range from 5-9 Lacs as per MoE guidelines.
4. Merit scholarship for the female students.
5. Central Sector Scholarship to SC students from the Ministry of Social Justice and Empowerment and to ST students from the Ministry of Tribal Affairs of Govt. Of India.
6. Scholarships from different states
7. Scholarships instituted by various notified private trusts.

Training & Placement

IIT Indore has always strived for building a strong mutually beneficial association with the recruiters and hence creating better opportunities for the students in placements and internships. The same is evident from our results, as IIT Indore has achieved a noteworthy record of 87% placement in recent placement session despite the global crisis. The average salary package in last few years has been INR 20 lakhs per annum and highest package received is INR 68 Lakhs per Annum_ Many of these companies offered lucrative internship/project work opportunities to our students along with full time offers. The highest stipend received is INR 1.50 lakhs per month. Usually, 5-10% students have been going for higher studies to top ranked foreign universities, IIMs, IITs whereas 3-5% students start their own enterprises and start-ups.

Students are offered various job roles (both Domestic and International recruiters) in areas like Automobile, Software Engineering/Developing, Technology Consulting, Analytics, Research & Development, Graduate Engineering Trainee, Data Scientist, Associate Engineering, PSUs etc. Companies from various sectors have visited IIT Indore which mainly includes Google, Amazon, DE-Shaw, Samsung R&D India, CISCO, Bosch, GE India, Barclays, Deloitte, Arcesium, TCS, Espressif Systems, Trilogy Innovations,,Qualcomm, PwC, Tredence Analytics, Publicis Sapient, Flipkart, Axtria, Mahindra, Strand Life Sciences, National Instrument, L&T, BEL, GAIL, DRDO,

Eicher-Volvo Commercial Vehicles
Pvt. Ltd., AVTEC Pvt. Ltd., TATA
Motors, 26 Miles Club., Adani,
Reliance, Samsung Solutions, Dolat
Capital, Legato Healthcare
Technologies, HCL Technologies,
Future First, Codenation, Goldman
Sachs, Walmart, Directi, Salesforce,
Razorpay, Go-Jek, Intel, TESCO,
Rippling, Oracle, Mathworks, MAQ
Software, Reliance Jio, Optum,
Maruti Suzuki, Analog Devices,
UpGrad, L&T Infotech, and many
more, while we had some Prominent
International Recruiters like Rakuten
Mobile Inc., Accenture Japan etc. as
part of On-Campus Placement
Drive. We had an amazing response
in the field of teaching recruitment
too - Allen, Physics Wallah,
Narayana Group of Institute, FIIT
JEE, Career Point etc were our top
Institutes.

Industry And Alumni Relations

**International Relationships and
Collaborations**

IIT Indore has proven its effectiveness in internationalizing its teaching and research worldwide with partnerships in higher education. IIT Indore is committed to providing world-class research and academic facilities, technological innovation hub, and promoting Indian Culture, Heritage, and Languages. To achieve these objectives, we are working with our partners across the globe to collaborate on research opportunities and the development of institutions. We aim to create a Centre of Excellence in Cutting-Edge Research Areas. It will serve as a hub that integrates research, education and practice to address key problems of today's society.

Recently, we are partnered with Julius-Maxmilians University Würzburg, Germany; African-Asia Rural Development Organization, Ministry of Education and Ministry of Innovation and Technology, Ethiopia; Finnish India Consortia for Research & Education, Széchenyi University, Hungary; Kwansei Gakuin University, Japan, and many other world-renowned organizations. In the year 2022, IIT Indore hosted many international students in our degree & exchange programs from SAARC & ASEAN, African, and Middle East Region.

Academic Pursuits

We host international students/faculties for various academic/research programs such as PhD, Masters exchange etc. every year through various government schemes such as Study in India (SII), Indian Council for Cultural Relations (ICCR), and

Association of Southeast Asian Nations (ASEAN), SAARC Finance-RBI, Nepal Scholarship.

In connection with the pursuit of academic activities, we have launched many programs as below:

1. *Short-term Research Programs for PhD Students*: The purpose or intention of these programs is to promote research, teaching, and to build a network through short-term visits of PhD students of foreign institutions to IIT Indore and *vice-versa*.
2. *Semester Exchange Program for IIT Indore UG/PG Students*: IR office has recently launched a Program that will provide international exposure to UG/PG students of IIT Indore.
3. *Mobility Grant for International MoU Coordinator*: This Grant is for IIT Indore Faculty Members who initiated the MoU with Foreign University/Institution. The coordinator will have to organize mutual activities under their respective MoU and submit their application to avail this Grant.
4. *French Language e-Certification Courses*: This course is open for students/staff/faculty/their spouses and kids. This will improve communication skills and will provide a competitive edge in career choices and lead to an appreciation of cultural diversity.

International Collaborations

As of now, we have signed over 70 MoUs across the globe, including 35 bilateral research grants with foreign institutes and 200+ international publications. We've also received more than 75 GIAN projects to date

and 20+ collaborative projects funded by SPARC, VAJRA and ASEM-DUO with foreign institutes.

In terms of International visits, IIT Indore hosted around 200 inbound/outbound visits.

International Outreach

International Outreach is a mechanism to facilitate the exchange of knowledge and skills between India and other countries, especially through collaboration between Indian universities and public institutions/organizations abroad. We have organized several webinars and talks by eminent speakers from various streams in online/offline mode this year, some major activities are as follows:

(i). DAAD: An interactive session by DAAD office on German Research Landscape and Funding Possibilities, Study in Germany (Master + PhD) and DAAD scholarships was conducted for the IIT Indore faculty members and students.

(ii). Full Bright: Program & Alumni Manager, United States-India Educational Foundation (USIEF) Fulbright Commission in India visited IIT Indore to take an outreach webinar. It was an interactive session that was organized for IIT Indore students and Faculty members to entail about the Fulbright-Nehru, and other Fulbright opportunities for study, research, teaching and professional development in the U.S.

(iii). Study in France: Representative from the Embassy of France in India visited IIT Indore to give a short session for students to entail about

the "Higher Education, Research, Internships, and Scholarship Opportunities existing in France".

Achievements

- This year, an IIT Indore BTech student has been awarded Charpak Exchange Scholarship 2023.
- 12 students from IIT Indore have been selected in MITACS GRI 2023.
- 35 IIT Indore UG students received Shraman Scholarship.
- Many IIT Indore faculty members have been awarded with prestigious international collaborative projects i.e. ASEM-DUO Belgium-Wallonia-Brussels Fellowship, Indo-Swiss Bilateral Project, Small Immediate Need Grants (SING) Award, U.S. Alumni Micro Grants 2022 etc.

The Alumni Cell of IIT Indore is the point of contact for all alumni matters including Industry and Research firms with the purpose of Liaoning and collaborations, industry funded research projects, industry consultancies, joint supervision of BTech project and MSc, MTech and PhD thesis, innovations, patents and licensing in coordination with the Center of Innovation, Incubation, Entrepreneurship and Industry Relations. The Cell conducts Industry Academia Conclave (IAC) to fulfil these objectives on timely basis. It is a platform for fostering constructive interaction between the industry and the academia and to discuss about prospective associations in the areas of industry-academia partnership. Significant advances have been since 2012 in this field enabling MoUs with IBM, GE Healthcare and numerous other companies and organizations. IIT Indore offers three adjunct faculty positions for industry personnel. In this regards, one can directly approach Director IIT Indore or Alumni Cell team.

Alumni Relations: A strong and contributing alumni network forms an essential factor in shaping the performance trajectory of an institute. IIT Indore currently boasts of about 2500 alumni of former UG, PG and PhD students graduated till 2022. A generous fraction of these students is pursuing higher education in reputed national and international universities, a large number is engaged in nation-building through providing services to Public Sector Units and internationally renowned organizations, and others have taken up entrepreneurial path by getting involved in setting up their own firms and businesses.

Alumni members are provided access to various institute facilities such as library, e-resources, accommodation, laboratory access at subsidized rates. Career guidance and ideas of business

development are provided to the alumni in congruence with the Entrepreneurship and Incubation Centre (CIIER) of the Institute. Magnum Opus is an annual meet which is conducted as part of Alumni Relations. We also Invite Prominent Alumni as dignitaries during our Annual Convocation each year.

Recreational/Extra Curricular activities

There is an active social welfare initiative taken up by students of IIT Indore called 'Avana' that plays a significant part towards the welfare of underprivileged people in and around Indore. This includes conducting teaching activities for rural children, distributing basic clothing and blankets through a donation mechanism, conducting blood donation camps, and, more recently, developing educational content such as educational videos to benefit the rural folk.

Students at IIT Indore also participate in many technical competitions, namely the BAJA competition (which includes the design and development of an 'all terrain' vehicle with optimal costs and resources), Robocon (comprising design and development of innovative robots), the ACM ICPC (colloquially known as the 'Olympics of Programming' where IIT Indore has regularly featured and won accolades), Boeing National Aeromodelling Competition, tech fests organized by other IITs, etc. IIT Indore bagged the 6th position at Tech Meet 2023, organized this year by IIT Kanpur, where all IITs compete in various technical problem statements. Students bagged medals in problem statements from every field of tech, be it hardware, product development, AI/ML, etc.

A robust coaching structure is available at IIT Indore for various sporting activities, comprising Cricket, Basketball, Football, Swimming, Athletics, and others. IIT Indore regularly participates in several sporting events, including the annual Inter-IIT Sports Meet, and its performance is improving with every passing year. The chess team won silver with an overall rank of 12 among the participating IITs. Sports Council at IIT Indore organizes many indoor & outdoor events like Sports Fests, Chess Tournaments, Cycling Competitions, Yoga Sessions, Marathon races & Challenge Runs, tournaments for cricket, basketball, throwball, dodgeball, badminton, volleyball, football, Athletics, swimming, etc. We also collaborate with local clubs and institutes to organize matches in different sports. In addition, students also participate in a lot of cultural competitions within the institute, like IBCC (Inter Branch Cultural Clash), where students from different branches compete to bring 'glory' to their branch and T vs M, which is a cultural competition between IIT Indore and IIM Indore. The performance in Cultural Meet is also improving with each passing year. This year our team stood third in Music Band performance, with an overall rank of 12.

Fluxus, IIT Indore's annual Techno-Cultural festival, is Central India's largest and hosts some of the country's biggest names in music, science, and literature. Quite a few cultural and technical events are organized around the festival, and the institute sees participation from students from all over the country.

Location and Accessibility

Indore City

Indore is the commercial capital of Madhya Pradesh with many industries in the vicinity. It is an educational hub and has institutes of international repute such IIM Indore, Raja Ramanna Center for Advanced Technology (RRCAT), UGC-DAE Consortium for Scientific Research, etc. Indore has young and vibrant students' population. The city is well connected by road, rail and air and is geographically located near Mumbai, Delhi, Hyderabad and Ahmedabad. Indore has been declared as no.1 cleanest city in all the Swachh Survekshans of the country.

By Air: Devi Ahilyabai Holkar Airport (IDR) is the busiest airport of MP and is about 8 km from Indore city. This is one of the best in India and offers good connectivity from major cities of India like New Delhi, Mumbai, Bangalore, Ahmedabad, Hyderabad, Pune, Kolkata, Jabalpur, Bhopal, Nagpur, and Raipur. International travelers can get connecting flights to Indore from Delhi (800 kms.) or Mumbai (655 kms.) airport. There are at least 5 airlines operating in Indore: Air India, Jet Airways, SpiceJet, Jet Lite and Indigo.

By Train: Indore Railway Station (INDB) is an important railway station in Western railway zone. It is well connected to major Indian cities like Mumbai, Pune, Nagpur, Delhi, Jaipur, Agra, Ahmedabad, Vadodara, Howrah, Bhopal, Ujjain, Gwalior, Bhind, Jabalpur, Bilaspur, Khandwa, Lucknow, Varanasi, Patna, Ambala Ct, Jammu, Dehradun, Trivandrum, etc.

By Bus: Indore is well connected by state road transport public bus services. The national highway NH3 (Bombay-Agra Road) and NH59 (Indore-Ahmedabad Road) passes through Indore and there are daily bus services from Indore to Mumbai, Jaipur, Gwalior, Bhopal, Pune, Ahmedabad, Surat etc. Regular buses, Super fast and Deluxe A/C buses are also available in these routes.

How to reach IIT Indore:

IIT Indore is located at Simrol, on Indore-Khandwa state highway. It is 35 km away from Devi Ahilyabai Holkar Airport and 28 km away from Indore Railway Station. There are three major Bus stand in Indore i.e. Sarwate Bus Stand (near Indore Railway Station), Gangwal Bus Stand, and Teen Imli Bus Stand and their distance from IIT Indore is 24 km, 31 km and 21 km respectively.

City Bus No. M-19 plies from BhanwarKuan Square to Gate No. 1 and Gate No. 2 of IIT Indore at an interval of 30 minutes. Taxi/ Cab can be hired to reach IIT Indore from Airport, Railway Station, Bus stand. Indore-Khandwa Buses also ply from Sarwate Bus Stand regularly at every 15-30 minutes; these buses can be boarded to reach IIT Indore.

Indian Institute of Technology Indore (IIT Indore) is an Institute of national importance located in [Indore, Madhya Pradesh, India](#).^[4] IIT Indore was founded in the year 2009. It was one of the eight new [Indian Institutes of Technology](#) (IITs) started by the government of India in the year 2009. IIT Indore is officially recognized as an [Institute of National Importance](#) by the [Government of India](#).^[5]

History[edit]

Founded in 2009, it is one of the eight new Indian Institutes of Technology (IITs) established by the Ministry of Human Resource Development, Government of India under The Institutes of Technology (Amendment) Act, 2011 which declares eight new IITs as well as the conversion of Institute of Technology, Banaras Hindu University as IIT.^[6] The Act was passed in the Lok Sabha on 24 March 2011^[7] and by the Rajya Sabha on 30 April 2012.^[8] Arjun Singh, the then HRD minister of India laid the foundation stone of IIT Indore on 17 February 2009 in its permanent campus located in Simrol, Indore, Madhya Pradesh. The institute worked from 2009 to 2010 in a temporary campus at Institute of Engineering and Technology^[9] of Devi Ahilya Vishwavidyalaya^[10] under mentorship of IIT Bombay with Dr. Pradeep Mathur as the founding director.^{[11][12]} The first batch of IIT Indore graduated in 2013, and the institute celebrated its first Convocation Day on 8 June 2013.^[13] Dr. Suhas Joshi, Professor of Mechanical Engineering and Dean of Alumni & Corporate relations at IIT Bombay has been appointed as the new director at IIT Indore who succeeds the officiating director, Dr. Neelesh Kumar Jain.^{[14][15][16]}

Campus^[edit]

IIT Indore is located at Simrol, Khandwa Road. The campus sprawls across 501.42 acres. IIT Indore moved from the two rented campuses to its permanent campus in Simrol in October 2015.^[3]

Learning Resource Centre (LRC)^[edit]

IIT Indore's central library, the Learning Resource Centre is equipped with Online Information Resources. The library provides its users access to nearly 3800 electronic journals as well as access to databases such as ACM Digital Library, IEEE Xplore digital library, Science Direct, MathSciNet, JSTOR, SciFinder, Taylor and Francis, Wiley, and Springer. The library also provides air-conditioned and Wi-Fi enabled Reading Halls.^[17]

Halls of Residence^[edit]

Most students at IIT Indore reside in the halls of residence. The campus has five halls of residence named A.P.J. Abdul Kalam, Homi Jehangir Bhabha, Vikram Sarabhai, C.V. Raman, and Devi Ahilya. The Devi Ahilya Hall of Residence is exclusively for the accommodation of women. Students are provided 5 BHK units to accommodate 5 students with one student per bedroom.^[18]

Health Centre^[edit]



Front view of Health Centre

IIT Indore's Health Centre provides health services to the students, faculties, employees, guests and to the entire IIT Indore community. Some expert consultants or doctors visit the Health Centre for better treatment of the community once or twice a week. [19]



Entrance of IIT Indore



Vanadium Building



A.P.J. Abdul Kalam Hall of Residence

Organisation and administration[\[edit\]](#)

Governance[\[edit\]](#)

See also: [Indian Institutes of Technology](#) § [Organisational structure](#)

IITs are administered centrally by the IITs' Council, an apex body established by the Government of India. The Minister of Human Resource & Development, Government of India, is the Chairman of the council. Each Institute has a Board of Governors responsible for its overall administration and control. Ex-ISRO chief, Dr K Sivan was appointed as chairman of IIT Indore's board of governors in September 2023. ^[20]

The senate, which consists of the heads, deans, and full professors of the institute, is the Apex Academic Body that decides the academic policies of the institute. It controls and approves the overall curriculum, courses, examinations, and results. It appoints committees to look into specific academic matters arising from time to time. The teaching, training, and research activities of various departments of the Institute are periodically reviewed to improve facilities and maintain standards. The Director of the institute is the ex-officio chairman of senate.

Departments[\[edit\]](#)

IIT Indore has the following departments:^[21]



Sodium Building



Fluorine Building

- Astronomy, Astrophysics and Space Engineering (AASE)^[22]
- Biosciences and Biomedical Engineering (BSBE)^[23]
- Chemistry^[24]
- Civil Engineering^[25]
- Computer Science and Engineering^[26]
- Electrical Engineering^[27]
- Humanities and Social Sciences^[28]
- Mathematics^[29]
- Mechanical Engineering^[30]
- Metallurgy Engineering and Materials Science^[31]
- Physics^[32]

Centers^[edit]

IIT Indore has the following centers.^[33]

- Centre for Advanced Electronics (CAE)^[34]
- Computer and Information Technology Center (CITC)^[35]
- Center of Futuristic Defense and Space Technology (CFDST)
- Center for Indian Scientific Knowledge Systems (CISKS)
- Center for Electric Vehicle and Intelligent Transport Systems (CEVITS)
- Sophisticated Instrumentation Center (SIC)
- Center of Innovation, Incubation, Entrepreneurship and Industry Relations (CIIEIR)^[36]
- Centre for Rural Development and Technology (CRDT)^[37]
- DST-FIST Center of Excellence in Gear Engineering^[38]
- Sophisticated Instrument Centre (SIC)^[39]
- Counselling Services^[40]
- Training and Placement^[41]
- Central Workshop^[42]

Technology Innovation Hubs[edit]

IITI DRISHTI CPS Foundation[edit]

DRISTI CPS (DRiving Innovation through Simulation Hub for Technologies in Interdisciplinary Cyber-Physical Systems)^{[43][44][45]} is a Technology Innovation Hub (TIH) at IIT Indore established under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS).^[46] The goal of DRISHTI CPS is to develop an eco-system of research and development in the system simulation, modeling, and visualization of Cyber-Physical Systems^[47] through joint efforts of the industry and academia.^[48]

Academics[edit]

IIT Indore offers a four-year [B.Tech](#) programs in several engineering fields. The postgraduate and graduate programs at IIT Indore includes [Ph.D](#), [M.Tech](#), [M.S.\(research\)](#) programs in engineering and M.S.(Data Science and Management); [Ph.D](#) and [M.Sc.](#) programs in basic sciences and humanities.^[49] IIT Indore offers numerous scholarships^[50] for students under different qualification criteria.

Admissions[edit]

Students are admitted into the various B.Tech. programs through the [Joint Entrance Examination – Advanced](#) (JEE(Adv)), which is typically taken by engineering aspirants after completion of their 10+2 schooling.^[51] Admission to the M.Tech/MS/Ph.D programs is done through [Graduate Aptitude Test in Engineering](#) (GATE),^[52] and the [Joint Admission Test](#) (JAM) is conducted for taking MSc students.^[53]

Rankings[edit]

University and college rankings	
General – international	
QS (World) (2023) ^[54]	396
QS (Asia) (2023) ^[55]	185

[QS \(World\) \(2023\)](#)^[54] 396

[QS \(Asia\) \(2023\)](#)^[55] 185

Times (World) (2023)^[56] 601–800

Times (Asia) (2022)^[57] 87

Times (Emerging) (2022)^[58] 84

General – India

NIRF (Overall) (2023)^[59] 28

NIRF (Research) (2023)^[60] 21

Engineering – India

NIRF (2023)^[61] 14

Internationally, the IIT Indore was ranked 396 in the *QS World University Rankings* of 2023^[54] and 185 in Asia.^[55] It was ranked 601–800 in the world by the *Times Higher Education World University Rankings* of 2023,^[56] 87 in Asia in 2022^[57] and 84 among emerging economies.^[58]

In India, it was ranked 14 among engineering colleges by the *National Institutional Ranking Framework* in 2023.^[61]

Research[edit]

The primary engineering research areas of IIT Indore are as follows:^[62]

- Department of Computer Science and Engineering - Algorithms and Theoretical Computer Science, *Artificial Intelligence*, *Software Engineering*, *Cyber Security*, Soft Computing, CAD-VLSI, *Human-Computer Interaction (HCI)*, *Computer Vision*, *Embedded Systems*, *Internet of Things (IoT)*
- Department of Electrical Engineering - *Semiconductor Devices Physics and Technology*, *Bio-medical Signal Processing*, *Organic electronic/photonic devices*, *VLSI*, *ULSI* Circuit, and System Design, *Power Electronics* and Power Systems
- Department of Mechanical Engineering - *Additive Manufacturing*, *Mechatronics*, *Internal Combustion Engines*, Thermal and Fluid Engineering, Computational Mechanics, Energy Storage, *Surface Engineering*, Vibration, Noise Control and Applied Optics and Laser Technology.

- Department of Civil Engineering - Structural Engineering, Geotechnical Engineering, Water Resource Engineering, Environmental Engineering, Glaciohydrology
- Department of Metallurgy and Material Science - Smart Materials, Nano Materials, MEMS/NEMS, Computational Materials, and Condensed Matter Physics

IIT Indore leads all the new IITs in terms of total citations as well as h-index as of 2015.^[63] Abstracting and indexing database [Scopus](#) has rated IIT Indore as the top among the new IITs, followed by seven IITs of Ropar, Patna, Bhubaneswar, Hyderabad, Gandhinagar and Jodhpur.^[64]

IIT Indore's formal undergraduate research scheme is entitled, "Promotion of Research and Innovation for Undergraduate Students (PRIUS)".^{[65][66][67][68][69]} IIT Indore actively participates in international projects and joint collaborations with research organizations in Japan, South Korea, the Russian Federation, Portugal, France, Germany, and USA.^[70] It started the Innovation and Entrepreneurship Development Centre (IEDC) to encourage entrepreneurship.^[71]

Research facilities[\[edit\]](#)

The institute provides instruments/facilities such as Nuclear Magnetic resonance spectrometer, CAD Tools for [Very Large Scale Integration](#) (VLSI) Design, Single crystal X-ray diffractometer, Time-correlated single photon counting ([TCSPC](#)), Liquid Chromatography Mass Spectrometry^[72] Total Internal Reflection Fluorescence Microscopy, Dual ion beam sputtering deposition (DIBSD) system, Spin Coater, Optical Surface Metrology System Profiler,^[73]

The Sophisticated Instrumentation Center (SIC) is a national facility hosted at IIT Indore's School of Basic Science. SIC at IIT Indore is equipped with Single Crystal X-ray Diffraction, [Nuclear Magnetic Resonance](#), [Mass Spectrometry](#), Elemental Analysis and Single Molecule Imaging and Spectroscopy.^[74]

Student life[\[edit\]](#)

Students' Gymkhana[\[edit\]](#)

The Students' Gymkhana is a body of elected student representatives responsible for the efficient execution of all the club activities, festivals & activities within IIT Indore, and the organization of the annual techno-cultural event Fluxus, among any other duties assigned by the institute.^{[75][76]}

Cultural and Non-Academic Activities[\[edit\]](#)

Fluxus[\[edit\]](#)



Farhan Akhtar performing at Fluxus 2015

Fluxus is the signature annual [social and cultural festival](#) of IIT Indore, held in February. It consists of several competitions, informal events, workshops and showcases professional performances. [\[77\]](#)[\[78\]](#)[\[79\]](#) It was started in 2011.

Fluxus 2019 included 'Kavyanjali' dedicated to Hindi and Urdu poetry and shayris with poet [Rahat Indori](#). Other guests including Kavi Sandeep Dwivedi, Surya Prakash Upadhyay, Rishi Dixit, Nitesh Kushwaha shared the stage with Dr. Rahat Indori. It also included the concerts of the rock band [The Local Train](#), the singer [Amit Trivedi](#)^[80] and the Canadian EDM performer, Miss Tara. The decade anniversary hosted an alumni meet Magnum Opus for all the IITI graduates. [\[81\]](#)[\[82\]](#)

Fluxus 2020 included musical performances of the singer duo [Salim–Sulaiman](#),^[83] DJ Shaan, The Yellow Diary and the stand-up comedy performance of [Zakir Khan](#).^[84]

Indian Institute of Technology Kanpur

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	JEE Office, DOAA Building, IIT Kanpur, Kalyanpur, Kanpur, Uttar Pradesh 208016, India
Contact Person For Admission:	Chairperson
Designation:	JEE (Advanced) 2023
Email:	jee@iitk.ac.in
Alternate Email:	jeeadv@iitk.ac.in
Phone Nos:	0512-2597335
Fax No:	
Mobile No.:	

About the Institute

IIT Kanpur is reputed all over the world for its innovative academic programmes stressing science based engineering education. Since its inception in 1959, the Institute has been engaged in carrying out original research of significance and technology development at the cutting edge. It offers students an exciting academic experience with opportunities to pursue interdisciplinary programmes and collaborative research within the Institute as well as through various exchange programmes with universities across the world. In addition, a

vibrant array of co-curricular and extra-curricular activities provides students with a holistic educational experience preparing them for a wide range of professions after graduation.

The time spent at IIT Kanpur makes a student grow from being a good learner into being a good thinker and a good researcher in his/her chosen field. Even undergraduate research at IIT Kanpur has won the Institute many laurels. Innovation is an integral part of teaching at IIT Kanpur. While the curriculum represents the Institute's vision for a given programme, the teaching methods are a choice of the individual teachers and reflect their vision. Faculty has immense freedom to experiment in their teaching so as to make it more effective.

IIT Kanpur offers a liberal undergraduate education, where knowledge of science and technology is part of a broader knowledge platform. A student has the choice of opting for more than 50% of courses outside of his/her chosen department. Of these, a student can opt for more than 25% of courses in the fields of management and humanities and social sciences. The students are, therefore, free to develop a wide knowledge base encompassing diverse disciplines. IIT Kanpur recognizes an undergraduate degree as the starting point of a student's higher education and aspirations and encourages the student to explore his/her interests further so that he/she may make an informed choice about what to do next.

For regular updates on reporting day, and for other queries, visit the Counselling Service IITK website: <https://www.iitk.ac.in/counsel/new-ug-information.php>

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Academic Structure

IIT Kanpur imparts training to students so that they become competent and motivated engineers, scientists and social scientists, and awards Bachelors, Masters and Doctoral degrees in various branches of technology, sciences, social sciences and humanities. The Institute celebrates freedom of thought, cultivates vision, nurtures entrepreneurship and encourages growth, inculcating human values and concern for the environment and society at the same time.

The IITK curriculum offers students wide exposure in core areas of the sciences, engineering, social sciences and humanities, along with a solid grounding in their specific

discipline. The curriculum also allows students significant amount of flexibility and choice, enabling them to explore varied areas of interest through open electives and interdisciplinary minors. For more focused interdisciplinary specialisation, the Institute offers double majors wherein a student may graduate with a B. Tech/BS in two separate disciplines through a one-year extension of the academic programme. The one-year extension may also be used to combine a Bachelors with a Master's degree (in same or different disciplines) through the dual degree programmes. The variety of choices on offer to students is enabled by a completely credit-based system wherein graduation requirements are based solely on the successful completion of a required number of credits distributed over several categories.

The Institute follows the semester system with two semesters of eighteen-week duration, including a one-week recess in each semester. In addition, an eight-week summer term is also offered to provide students with additional opportunities to complete the required credits for graduation.

A diagnostic test to ascertain general proficiency in English is conducted for ALL undergraduate students admitted to IIT Kanpur. Based on their performance in this test, some students are advised to take a basic course in English Language.

Rules For Change Branch

A student may be allowed to change the branch/programme subject to certain constraints in each branch/programme. All cases are decided in decreasing order of Cumulative Performance Index (CPI) of the eligible applicants. A unique aspect of IIT Kanpur rules is that branch change is allowed not just after second semester but also after 3rd and 4th semesters.

In addition to the above, although all the students are initially admitted to a programme in Bachelor of Science/Bachelor of Technology, the interested students can apply for conversion to a dual-degree programme. The second degree may be M.Tech./M.S./M.B.A./M.Des. Furthermore, an interested student, who is doing well in his/her programme, can decide to opt for a second major. A second major typically requires 9-10 additional courses and may require an extra year for completion

Faculty

At IITK teachers engage with the class. It is not a one-way communication. Each student in the class is important to the faculty. The faculty is very approachable. No fear or awe is expected from the students. The classroom atmosphere while being focused on learning is student friendly. The education at IITK encourages critical thinking. That is why IITK encourages curiosity based learning. Often teachers will ask questions aimed at making the student think. Such introspection helps the student make connections and envision the bigger picture. Teaching at IITK inspires students to push their personal boundaries. Courses are taught in depth and with background to help students grasp concepts firmly. There is often optional content that challenges and motivates students. This takes them to the frontiers of research in the area.

The faculty enjoy this freedom and use it to impart in-depth knowledge to the students. An example of innovative teaching is quasi open exams where the emphasis is neither on how fast a student can recall nor on how well he/she can reproduce the lecture notes in the exam but on how deep his/her understanding of the subject is.

In its undergraduate education, IITK has removed the artificial split between the two science streams of Physics, Chemistry & Mathematics (PCM) and Physics, Chemistry & Biology (PCB). This has been done by introducing life sciences courses for engineering students. This is in tune with the needs of society since greater interaction between the two streams is required to deliver the next generation of inventions and discoveries.

Facilities

In keeping with its reputation for academic excellence, the Institute has state-of-the-art facilities with one of the best and openly accessible computing facilities and modern laboratories that include a unique flight laboratory with several powered aircrafts, gliders and a one kilometer runway. The P K Kelkar Library of the Institute is one of the finest scientific and technological libraries with an online information retrieval system over the campus LAN. The curriculum at IIT Kanpur has a strong emphasis on Humanities and Social Sciences (HSS). The HSS department offers courses in Psychology, Sociology, Economics, Philosophy, Fine Arts, English Literature and Linguistics. A Language Laboratory with computer controlled audio and video components is deployed for offering courses in foreign languages such as French, German and Japanese.

Student Life at Institute

The Institute has a strong Counselling Service to help students settle down comfortably in the new environment and cope with the stresses of student life. Sincere and dedicated student volunteers, helped by faculty advisers, organize the orientation programme for the fresh entrants, provide extra help in course work, if needed, and conduct language classes, etc. The students are involved in all the decision making processes of the Institute via student representatives in various Institute committees

The Institute has a fully residential picturesque campus, spread over 1055 acres of land, with all modern amenities. It has about 5091 undergraduate and 3477 postgraduate students, around 543 faculty members and 650 supporting staff. Several shopping complexes, branches of State Bank of India and Union Bank of India, a 24hr electronic lounge of ICICI Bank, a post office, a petrol pump, and other amenities fulfil the needs of the campus community. Each hostel (Hall of Residence) has a modern mess providing breakfast, lunch, evening tea and dinner to all residents during designated hours. In addition, every hostel has a canteen which is open till late in the night to cater to students' needs. The campus also has many eating joints (restaurants, food courts, canteens) located at various centres of activity such as the Academic Area, Student Activities Centre etc. The students are accommodated in thirteen boys' hostels and three girls' hostels. In addition, there is housing facility for married students. All rooms in the hostels have a provision for internet connectivity and connection to other computers through Local Area Network.

Equipped with pharmacy, clinical laboratory, physiotherapy facility and a 30-bed indoor ward, the Health Centre provides round-the-clock medical help and emergency care to the campus community

Financial Assistance

IIT-Kanpur provides a large number of scholarships to its students. At least 25% Undergraduate (UG) students (B.Tech., B.S.) in a batch receive Merit-cum-Means scholarships from the institute. The details of all such scholarships are available at the following link: <http://www.iitk.ac.in/dosa/DOSA/scholarship.htm>

In order to be considered for any of these scholarships a student must produce a “Parental Income Certificate” at the time of registration to establish the means criterion. The form for this purpose (Format for Parental Income certificate) is also available at the link above.

Apart from Merit-cum-Means scholarships, several merit scholarships, sports scholarships, and other prizes are also awarded to deserving student.

Training & Placement

IIT Kanpur students are highly motivated and highly accomplished. They work more per unit of education than the students at any other institution. They are ambitious, energetic and make excellent addition to any corporate environment.

IIT Kanpur encourages innovators and entrepreneurs. Evidence of the highly talented and responsible character of our students is their Placements at University, corporate and government research facilities all over the world and at highly successful companies.

Our hiring partners range from consulting firms to FMCGs to core industries, software giants, E-commerce and engineering companies, with the leading recruiters being Intel, Tata Motors, EXL Services, Goldman Sachs, Microsoft, Bank of America, Michelin, Exxon Mobil, Samsung, Blackrock, UIDAI, Rubrik Inc., American Express etc.

The placement drive has set a new record both in terms of placement and the hefty packages offered to students. A little more than 86% of the graduating batch (including UG and PG) were placed through Student Placement Office during the academic year 2018-19. This does not include those opting for higher studies or other avenues.

IIT Kanpur also boasts of a well-structured internship programme that strongly encourages pre-final year students to appear for semester internships, and carries the reputation of earning pre-placement offers for a large percentage of its interns. Needless to say, the opportunity of harnessing potential and tapping into the talent pool at an early stage attracts a lot of recruiters.

Industry And Alumni Relations

IIT Kanpur has a large alumni network of more than 35000 members which includes personalities such as N.R. Narayana Murthy, co-founder of Infosys, Naveen Tiwari, founder and CEO of Inmobi and many other illustrious names. IIT Kanpur enjoys liberal financial support from the Government of India. However, in order to fulfill its aspirations to become a top school worldwide, the Institute needs private funding over and above the government grants. IIT Kanpur alumni have made remarkable contributions in various fields across the globe and have fulfilled its mission of striving for excellence. They have played a major role in carrying forward the rich legacy of the Institute and continue to do so. The Institute welcomes its alumni for an endearing relationship with their alma mater. The Institute works closely with the Alumni Association to involve its alumni through various activities towards excellence at IIT Kanpur. The Dean, Resources and Alumni office works to encourage alumni to become personally involved in and financially support institute initiatives and activities.

The institute recognizes alumni who have distinguished themselves through their work and done the institute proud. IIT Kanpur has instituted Distinguished Service Awards for alumni who have rendered special services to the cause of the betterment of the institute. The institute also involves the alumni in its educational and research activities, whenever possible, by inviting them to participate on its advisory boards as visiting faculty or as guest speakers. Our alumni have responded whole-heartedly by supporting the institute with the most generous endowments, leading to the establishment of schools, laboratories, scholarships, chairs and other infrastructure. A few of our notable alumni are N.R. Narayana Murthy, Naveen Tiwari, Lalit Jalan, Late Satyendra Dubey, Jitendra Malik, Ashok Jhunjhunwala, Anil K. Rajvanshi, Ashoke Sen, Ayyalusamy Ramamoorthy, Chandra Kintala, Duvvuri Subbarao, Manindra Agrawal etc.

Recreational/Extra Curricular activities

A number of extra-curricular activities, recreational as well as managerial, are an integral part of the educational experience at IIT Kanpur. All such activities are coordinated by the Students Gymkhana. Students are involved in all decision making bodies, including the administration of academic programmes, hostel management and even disciplinary matters. Further, students organize events such as Antaragni, the cultural festival, Udghosh, the games and sports festival, and Techkriti, the science, technology and entrepreneurship festival. These events draw participation from academic institutions all over the country. Further, students also participate in Inter-IIT Sports Meet held every year in one of the IITs during the month of December. In addition, students organize a large number of extra-curricular events encompassing literary and cultural activities through a number of clubs and societies. These include Adventure Club, Nature Club, Astronomy Club, Photography Club, Students Film Society, Aero-modelling Club, Gliding Club, Robotics Club, HAM Club, Music Club, Dance Club and Dramatics Club etc. The Institute has an airstrip, an Olympic-sized swimming pool, a rock climbing facility, state-of-the-art gymnasiums, excellent indoor and outdoor sports facilities (housing synthetic basketball and tennis courts, indoor basketball, badminton and squash courts, pool table, etc.), an open air theatre, and a 1200 capacity auditorium with excellent acoustics. NCC and NSS programmes to inculcate social values in students and their personality development are also conducted.

Location and Accessibility

The Campus of IIT Kanpur is located off the Grand Trunk Road near Kalayanpur, about 16 km west of Kanpur city.

Arrival by AIR: It is recommended that visitors fly into the Lucknow Airport located about 90 kms from IIT Kanpur. You can hire taxis at the airport. It takes between two and three hours to drive from the Lucknow airport to the IITK. Kanpur airport has very limited flights.

Arrival by TRAIN: Kanpur Central Railway Station is well connected to most cities in North, East and Central India. It is located on the Delhi-Kolkata train route. IIT Kanpur is located at a distance of about 16 kilometres from the Kanpur Central Railway Station. It is possible to hire taxis and auto rickshaws to travel to IITK from the station. It takes about 40 minutes to drive from Kanpur Central Railway Station to IIT Kanpur.

Arrival by ROAD: Kanpur lies on National Highway 2 (NH2) connecting Amritsar in the North to Kolkata in the East. It passes through New Delhi, Agra, Kanpur, Allahabad and Patna enroute. It is about 480 km from Delhi via this highway. Kanpur is also connected to Lucknow on NH25 and is about 90 km from Lucknow. Kanpur is connected to Delhi (440 Km) via another highway NH81 passing through Ghaziabad and Aligarh. Agra-Lucknow expressway which connects Delhi via Agra passes through Billhaur and is approximately 50 km from IIT Kanpur on NH 81.

The institute's location in the major industrial city of Kanpur makes for convenient access to all cities, town and villages in the country

For more information, please visit: <http://www.iitk.ac.in>

Description

Course

FOUR-YEAR B.Tech COURSES

1) AEROSPACE ENGINEERING

Aerospace engineering is more than 100-year old high-technology discipline. Yet, much remains to be done to broaden its scope and application to develop next generation hypersonic aircraft, fast whisper-quiet helicopters, reusable spacecrafts and launch vehicles, high performance engines, intelligent autonomous Unmanned Aerial Vehicles etc. As a result, aerospace engineering is a dynamic ever-evolving discipline full of exciting opportunities and challenges to keep one excited and engaged in its pursuit over a lifetime. Aerospace engineers are concerned with the design, analysis, construction, testing and operation of flight vehicles, including aircraft, helicopters, rockets and spacecraft. The program includes courses in a wide range of topics such as fluid mechanics, aerodynamics, dynamics, flight mechanics, aerospace materials, structural mechanics, propulsion, aerospace vehicle design, automatic control and guidance etc.. The department has

state-of-the-art experimental facilities, including the Flight Laboratory that houses a fleet of aircraft and motor gliders, which are used by students for experiments and to learn the practical aspects of aerospace engineering through projects. The students get an opportunity to design, build and fly their own aircraft models in the aeromodeling lab as a part of their curriculum.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

2) BIOLOGICAL SCIENCES AND BIOENGINEERING

B.Tech. program in biological sciences and bioengineering (BSBE) at IIT Kanpur was started in 2004. The program provides a unique fusion of biology with other basic and engineering sciences. There is no prerequisite of biology at school level for admission in this program. The goal of this program is to prepare the students, both in theory and practice, for leadership in the globally competitive fields of Life Science, Bioengineering/Biomedical Engineering, Pharmaceutical, Biotechnology industry, academia and research. The program has been developed to meet the increasing demand in these fields of industry and research. The students of BSBE will take courses common with all other branches of science and engineering in the first year. During their second year, they will take foundation and elective courses in basic biology and bioengineering topics, besides developing their interest and excitement in biological experimentations and discoveries. Concepts in biology will be developed to provide a holistic view and to facilitate integration of these concepts with the fundamental principles of physics, chemistry, mathematics and engineering. The final two years of the program will be dedicated to the development of the professional competence of the students on a broad spectrum of topics. These include cell and molecular biology, structural and computational biology, biomaterials, tissue engineering, downstream processing, bioengineering, genetics and genomics, neuroscience and neurobiology. Major emphasis during the final semesters will be on research and development and focus will be on development of entrepreneurial skill as well. Students would also compete for "Joy Gill Endowment" scholarship for R&D internship in Biopharma and Biotech industries besides participating in Bio-business plan competitions. UG students will have the opportunity to win the Summer Internship Award and this award is given based on the work carried out during summer internship.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

3) CHEMICAL ENGINEERING

Chemical engineers work in diverse fields like petroleum refining, fertilizer technology, paper, cement, processing of food and agricultural products, synthetic food, petrochemicals, drug design and delivery, pharmaceuticals, synthetic fibres, coal and mineral based industries, and prevention and control of environmental pollution. Chemical engineering is concerned with the development and improvement of processes, design, construction, operation, management and safety of the plants for these processes and research in these areas.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

4) CIVIL ENGINEERING

Civil engineering is one of the oldest engineering professions providing for habitat, water and sanitation in every ancient civilization around the world. As discipline, it has traveled a long way since the building of pyramids and now encompasses a vast array of sub-disciplines. A modern day civil engineer is expected to gain knowledge of structures, mechanics, materials science, survey, geology, soil and foundation, environment and sanitation, hydrology, water resources and transportation. Application of this knowledge serve as the foundation of modern day civilization. Some of these are: planning, analysis, design, construction and maintenance of a variety of facilities such as buildings, highways and railways, airports, waterways and canals, dams and power houses, water treatment and waste water disposal systems, environmental quality control, docks and harbours, bridges and tunnels and offshore structures for oil production. Some of the modern developments in civil engineering profession are in the areas of disaster mitigation and management in the times of natural disasters, flood forecasting and flood control, urban transportation planning, alternative energy resources, global climate change, etc. A modern day civil engineer routinely uses various application software and Computer Aided Design (CAD) and, also develops software for specific application. Civil engineering is particularly attractive to young and bright students because of the breadth and diversity of the profession. The breadth of knowledge gained also opens the door for higher studies in a vast array of specified areas.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

5) COMPUTER SCIENCE AND ENGINEERING

This course gives a comprehensive education in all principal sub-fields of computer science, including Artificial Intelligence and machine learning, Computer vision, Computer Architecture, Design of Databases, Data and Knowledge Mining, Operating System, Compilers, Program Analysis, Programming Languages and systems, Mobile and Distributed Computing, Computer Networks, Design, Cyber Security, Cryptography, Design and Analysis of Algorithms, Theory of computing and logic and Algorithmic game theory.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

6) ELECTRICAL ENGINEERING

This course pertains to the broad discipline consisting of electrical power engineering, electronics engineering, signal processing, communication, electromagnetics, RF, microwaves and photonics. Electrical engineering deals with the generation, distribution, and use of electrical power. Electronics engineering deals with electronic components, circuits, IC design and analysis, and their manufacturing process. Signal processing, communication, electromagnetics, RF, microwave and photonics deal with capture, processing, storage,

transmission and presentation of information using wired, wireless and optical means. This program prepares the students to contribute to a wide range of areas such as machine intelligence, human healthcare, power generation, distribution and consumption, renewable energy, microgrids, sensors, electric vehicles, communications infrastructure, robotics, and so on.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

7) MECHANICAL ENGINEERING

Mechanical engineering is one of the oldest and broadest of all the engineering disciplines. It is concerned with the design, analysis, manufacture, control, and maintenance of systems ranging from power generation, air conditioning, machine tools, industrial automation, automobiles, transportation systems, medical devices, defense-related systems, etc. The field has continually evolved to incorporate advancements in areas like composites, robotics, nanotechnology, additive manufacturing, CAD/CAM, biomechanics, Artificial Intelligence, high performance computing and modelling of natural phenomena. In the program, students get exposure to fundamental and applied topics such as thermodynamics, fluid mechanics, heat transfer, combustion, kinematics, dynamics, materials, design, robotics, and machine learning. The diversity of the ME program comprehensively prepares the students to effectively handle challenges in almost all industries, apart from financial and IT sectors. Our past students include practitioners, researchers, and educators who have defined mechanical engineering in all spheres of life.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

8) MATERIALS SCIENCE AND ENGINEERING

The Department of Materials Science and Engineering nurtures following facets with great care: i) teaching and research as driven by diverse needs of the nation combining the traditional metallurgy and modern materials, ii) focus on both fundamental and applied education, iii) technology and product development leading to incubation of start-ups, and iv) building the bridge between academia and industry. Its areas of interest remain in physical and mechanical metallurgy, process metallurgy, computational materials science, functional & device materials, and biomaterials & bio-medical engineering, and it covers wide ranges materials like metals & polymers, semiconductors & ceramics, biomaterials & composites, and smart materials. B.Tech students graduating from Materials Science and Engineering undergo a rigorous training program which includes not only a thorough course work, but also a meticulously planned hands-on training through laboratory works and various projects. The Department actively contributes to several industry sectors, like steel, energy, space, automotive, healthcare, defense, electronics and environment.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

FOUR-YEAR B.S. COURSES

9) CHEMISTRY

This programme prepares the students for modern day research in chemical sciences and allied disciplines. Besides an in-depth education in chemistry, adequate training in mathematics, physics, computers, and engineering sciences are also integrated. In the first two semesters of their stay in the programme, they take the same courses as their fellow engineering students. During the course, they are trained to do frontline research in interdisciplinary areas, which include materials science, environmental science and chemical biology, in addition to the traditional topics in chemistry.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

10) ECONOMICS

Department of Economics Sciences, IIT Kanpur, is the first separate department of Economics in the IIT System. Economics is in great demand currently. It is not only in demand in the financial industry and the government, but increasingly various firms are in search for professionals who are trained in both economics and technology. The traditional undergraduate programs in economics in India only train people in economics and thus the usual economics graduates may not be suitable for today's needs. The 4 years BS and 5 years BS-MS (Dual degree) programs in Economics fills this void in an admirable way. The Economics undergraduate program at IIT Kanpur is unique because it trains the students not only in the core areas of economics but also gives them a solid training in basic science and basic engineering disciplines. Thus, the students who graduate in Economics from IIT Kanpur has the requisite skills in both economics and technology and thus are in very high demand from both the financial and technical sectors. The skills imparted during the 4 years BS and 5 years BS-MS (Dual degree) also make the students competent enough to continue higher studies and research in economics and other allied disciplines like statistics and operation research.

The program provides courses in basic science, engineering, and computational methods in the first year. The next few semesters of the program offers extensive training in the foundational subjects: the core areas of Economics, namely Microeconomics, Macroeconomics, and Econometrics along with courses on Game Theory, Applied Probability and Statistics, and Optimization which are useful for different areas of science and engineering. Courses in later years allow students to choose elective courses to pursue their diverse interests in area such as business, finance, policy, and data analysis.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

11) MATHEMATICS AND SCIENTIFIC COMPUTING

The development of mathematics has always affected all human endeavours, including the computing technology. Today, the nature of mathematics and the way mathematicians think are also being affected significantly because of the fast changing trends in computing

technology. Modern Mathematics has a significant computing component that is essential in vast areas of scientific and industrial activities.

This programme provides a rigorous training in mathematical thinking and the analytical capability needed in present-day scientific computing. Through a carefully designed sequence of compulsory and elective courses, the programme enables a student to specialize in the area of his/her choice, be it pure mathematics, applied mathematics, statistics, or computing and development of mathematical/analytical software.

A graduate of this programme would have an extensive and rigorous training in algebra, analysis, computational techniques, probabilistic and statistical methods, mathematical modelling, simulation, and will be equipped to make significant contributions in academic research/teaching, or to pursue a meaningful professional career in public/private sector undertakings or in leading R&D organizations.

Gender-based and/or handicap (physical/neurological)-based restrictions: NONE

12) STATISTICS AND DATA SCIENCE

In every aspect of the modern world, copious amounts of data is being produced. Studying and analyzing this data leads to breakthrough discoveries and fundamental developments in science, technology, industry, and public policy. Such a "study of data" requires fundamental training in both theory and computation.

This programme brings together the much desired intersection of "Statistics and Data Science". The programme has been carefully designed to equip students with the fundamental concepts of probability, statistical analysis, practical implementation, and software development. There are plenty of opportunities for students to explore aspects of machine learning, artificial intelligence, modelling and simulation, theoretical statistics, industry internships, and research projects.

Given that students can decide to focus more on either Statistics or Data Science, they can develop their academic profile based on their employment goals. Thus, graduates of the programme will be in an excellent position to contribute to any of academia, government, and industry.

Gender-based and/or handicap (physical/neurological)-based restrictions: NONE

13) PHYSICS

This course is designed to produce students capable of pursuing advanced studies in theoretical and experimental physics as well as handling problems related to applications of physics in engineering, technology, industry and medicine. This is achieved by making use of a well-balanced course structure consisting of undergraduate core courses in basic sciences, engineering sciences including computer programming and in technical arts that include engineering drawing and workshop practices during the first and second year. In

addition, students in the BS programme also develop a broad perspective by taking courses in Social-Sciences, Communication, Humanities, Economics, Management and Environment (SCHEME), which are an integral part of the curriculum required to get a BS. The students obtain a wholesome hands-on training in experiments and all foundational aspects of physics, further the students can opt for specialized courses in advanced physics. During their studies, students also acquire valuable research expertise by working on projects related to current research problems physics.

Gender-based and/or handicap (physical/ neurological)-based restrictions: NONE

14) EARTH SCIENCES

The Department of Earth Sciences at the Indian Institute of Technology Kanpur, established in 2014, offers a BS-MS program to promote interdisciplinary teaching and research with the goal of providing trained manpower to meet our nation's demands.

The BS-MS program aims to focus on studying the Earth, encompassing its evolution and internal dynamics, surface processes, natural and human-induced transformations, natural hazards, and the terrestrial environment vis-a-vis sustainable development. The program's first year will be common with all other branches of science and engineering.

The foundation courses in Earth Science will start in the second year, followed by advanced core courses in the third and fourth years. The MS program will provide an opportunity to specialize in applied geology, applied geophysics, water and climate, solid earth geology, and natural hazards. In addition to an interdisciplinary course curriculum, the students will be trained to perform high-quality research on pertinent issues related to Earth Sciences, such as those concerned with the exploration of natural resources and their use by society, solid earth geology, quaternary geology, and the mitigation of natural hazards. Thus, this program will provide a sound and up-to-date foundation on various aspects of Earth Sciences, which will form the foundation for further study and a wide range of employment opportunities in mineral, energy, water, environmental, and geospatial sectors. Recognizing the increasing complexity of coupled environmental-social systems, this program aims to meet the expectations of the nation in terms of creating modern and interdisciplinary earth science programs that will produce manpower capable of engaging in services and research related to advancing the fundamental understanding of the Earth system and promoting sustainable development of natural resources. The course will involve several field-based courses/training but will not require any specialized skills. For more information, visit <http://www.iitk.ac.in/es/>

Gender-based and/or handicap (physical/neurological) based restrictions: NONE

Indian Institute of Technology Kanpur (IIT Kanpur) is a public institute of technology located in Kanpur, Uttar Pradesh, India. It was declared an Institute of National Importance by the Government of India under the Institutes of Technology Act. IIT Kanpur is ranked among the most prestigious academic institutions in India.[2]

The institution was established in 1959, as one of the first Indian Institutes of Technology, the institute was created with the assistance of a consortium of nine US research universities as part of the Kanpur Indo-American Programme (KIAP).[3][4]

History

IIT Kanpur was established by an Act of Parliament in 1960 by the Government of India. The institute was started in December 1959 in a room in the canteen building of the Harcourt Butler Technological Institute at Agricultural Gardens in Kanpur. In 1963, the institute moved to its present location, on the Grand Trunk Road near Kalyanpur locality in Kanpur district.[5] The campus was designed by Achyut Kavinde in a modernist style.

During the first ten years of its existence, a consortium of nine US universities (namely MIT, UCB, California Institute of Technology, Princeton University, Carnegie Institute of Technology, University of Michigan, Ohio State University, Case Institute of Technology and Purdue University) helped set up IIT Kanpur's research laboratories and academic programmes under the Kanpur Indo-American Programme (KIAP).[6] The first director of the institute was P. K. Kelkar (after whom the Central Library was renamed in 2002).[7]

Under the guidance of economist John Kenneth Galbraith, IIT Kanpur was the first institute in India to offer Computer science education.[7][8] The earliest computer course was started at the institute in August 1963 on an IBM 1620 system. The initiative for computer education came from the Electrical engineering department, then under the chairmanship of Prof. H.K. Kesavan, who was concurrently the chairman of Electrical Engineering and head of the Computer Centre. Prof. Harry Huskey of the University of California, Berkeley, who preceded Kesavan, helped[7] with the computer activity at IIT-Kanpur.[7] In 1971, the institute began an independent academic program in Computer Science and Engineering, leading to MTech and PhD degrees.[7]

In 1972 the KIAP program ended, in part because of political tensions between India and Pakistan (as the USA supported Pakistan). Government funding was also reduced as a reaction to the sentiment that the IIT's were contributing to the brain drain.

The institute's annual technical festival, Techkriti, was first started in 1995.

Campus

IIT Kanpur panorama from Hall 7

IIT Kanpur is located on the Grand Trunk Road, 15 kilometres (9.3 mi) west of Kanpur City and measures close to 420 hectares (1,000 acres). This land was donated by the Government of Uttar Pradesh in 1960 and by March 1963 the institute had moved to its current location.

PK Kelkar Library

The institute has around 6478 students with 3938 undergraduate students and 2540 postgraduate students and about 500 research associates.

The academic area comprises the central library, departmental buildings, research centres, lecture hall complex, tutorial block and auditorium. The student hostels and other facilities like Student Activities Centre (SAC), Sports Complex lie outside the academic area. There are 15 Halls of Residence which are allotted to undergraduate, postgraduate and doctoral students. Additionally, married research scholars are allotted Single Bedroom Apartment (SBRA) facility on campus.[9]

Noida Extension centre

IIT Kanpur has its Extension Centre in Noida with a small convention centre there for supporting outreach activities. Its foundation was laid on 4 December 2012 on 5 acres of land allocated by Uttar Pradesh state government in the sector-62[10] of Noida city, which is less than an hour's journey from New Delhi and the Indira Gandhi International Airport. The cost of construction is estimated to be about 25 crores. The new campus will have an auditorium, seminar halls for organising national and international conferences and an International Relations Office along with a 7-storey guest house. Several short-term

management courses and refresher courses meant for distance learning will be available at the extension center.[11]

Helicopter service

Being a major industrial town, Kanpur has good connectivity by rail and by road, but lags behind in terms of air connectivity. IIT Kanpur was suffering significantly in comparison to IIT Delhi and IIT Bombay due to this reason as far as visiting companies and other dignitaries are concerned. On 1 June 2013, a helicopter ferry service was started at IIT Kanpur run by Pawan Hans Helicopters Limited. In its initial run the service connects IIT Kanpur to Lucknow, but it is planned to later extend it to New Delhi. Currently[when?] there are two flights daily to and from Lucknow Airport with a duration of 25 minutes. Lucknow Airport operates both international and domestic flights to major cities. IIT Kanpur is the first academic institution in the country to provide such a service.[12][13][14] The estimated charges are Rs. 6000 (US\$100) per person. If anyone would like to avail the facility, he/she has to contact the Student Placement Office (SPO) at IIT Kanpur, since the helicopter service is subject to availability of chopper rights. The campus also has airstrips which allows flight workshops and joyrides for students.[15] Currently Kanpur has a domestic airport terminal at Chakeri, with flight connectivity to New Delhi, Mumbai, Pune, Chennai and Bengaluru airports.

New York Office

The institute has set up an office in New York with alumnus Sanjiv Khosla designated as the overseas brand ambassador of the institute. It is located on 62 William Street, Manhattan. The office aims to hunt for qualified and capable faculty abroad, facilitate internship opportunities in North American universities and be conduit for research tie ups with various US universities.[16] The New York Office also tries to amass funds through the alumni based there. A system that invites students and faculty of foreign institutes to IIT Kanpur is also being formulated.[17]

Organisation and administration

Governance

See also: Indian Institutes of Technology § Organisational structure

All IITs follow the same organization structure which has the President of India as the visitor at the top of the hierarchy. Directly under the president is the IIT Council. Under the IIT

Council is the board of governors of each IIT. Under the board of governors is the director, who is the chief academic and executive officer of the IIT. Under the director, in the organizational structure, comes the deputy director. Under the director and the deputy director, come the deans, the heads of various departments, and the registrar.

Departments

The academic departments at IIT Kanpur are:

Engineering Humanities Inter-Disciplinary

Aerospace Engineering

Biological Sciences and Bio-engineering

Chemical Engineering

Civil Engineering

Computer Science and Engineering

Electrical Engineering

Materials Science and Engineering

Mechanical Engineering

Sustainable Energy Engineering

Humanities and Social Sciences

Cognitive Science

Environmental Engineering and Management

Photonics Science and Engineering

Design

Material Science

Nuclear Engineering and Technology

Sciences Management

Chemistry

Mathematics and Statistics

Physics

Earth Sciences

Economic Sciences

Management Sciences

Academics

IIT Kanpur Faculty Building

Undergraduate

IIT Kanpur offers four-year B.Tech programs in Aerospace Engineering, Biological Sciences and Bio-engineering, Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Materials Science and Engineering and Mechanical Engineering. The admission to these programs is procured through Joint Entrance Examination. IITK offers admission only to bachelor's degree now (discontinuing the integrated course programs), but it can be extended by 1 year to make it integrated, depending on the choice of student and based on his/her performance there at undergraduate level. IIT Kanpur also offers four-year B.S. Programs in Pure and Applied Sciences (Mathematics, Physics and Chemistry in particular), Earth Science and Economics.[18]

New academic system

From 2011, IIT Kanpur has started offering a four-year BS program in sciences and has kept its BTech Program intact. Entry to the five-year MTech/MBA programs and Dual degree programme will be done based on the CPI of students instead of JEE rank.[19] In order to

reduce the number of student exams, IIT Kanpur has also abolished the earlier system of conducting two mid-term examinations. Instead, only two examinations (plus two quizzes in most courses depending on the instructor-in-charge, one before mid-semesters and the other after the mid-semesters and before the end-semesters examination), one between the semester and other towards the end of it would be held from the academic session starting July 2011 onward as per Academic Review Committee's recommendations.

Postgraduate

Postgraduate courses in Engineering offer Master of Technology (MTech), MS (R) and PhD(Doctor of Philosophy) degrees. The institute also offers two-tier MSc(Master of Science) courses in areas of basic sciences in which students are admitted through Joint Admission Test for MSc (JAM) exam. The institute also offers M.Des. (2 years), M.B.A. (2 years) and MSc (2 years) degrees. Admissions to MTech is made once a year through Graduate Aptitude Test in Engineering. Admissions to M. Des are made once a year through both Graduate Aptitude Test in Engineering (GATE) and Common Entrance Exam for Design (CEED). Until 2011, admissions to the M.B.A. program were accomplished through the Joint Management Entrance Test (JMET), held yearly, and followed by a Group Discussion/Personal Interview process. In 2011, JMET was replaced by Common Admission Test (CAT).[20][21]

Admissions

Undergraduate admissions until 2012 were being done through the national-level Indian Institute of Technology Joint Entrance Examination (IIT-JEE). Following the Ministry of Human Resource Development's decision to replace IIT-JEE with a common engineering entrance examination, IIT Kanpur's admissions are now based on JEE (Joint Entrance Examination) -Advanced level along with other IITs.

Postgraduate admissions are made through the Graduate Aptitude Test in Engineering and Common Admission Test.[22]

Rankings

University and college rankings

General – international

QS (World) (2023)[23]264

QS (Asia) (2023)[24] 66

General – India

NIRF (Overall) (2023)[25] 5

NIRF (Research) (2023)[26] 6

QS (India) (2020)[27] 6

Engineering – India

NIRF (2023)[28] 5

India Today (2022)[29] 3

Government colleges:

Outlook India (2022)[30] 5

Business/Management – India

NIRF (2023)[31] 23

Internationally, IIT Kanpur was ranked 264 in the world by the QS World University Rankings of 2023[23] and 66 in Asia.[24]

IIT Kanpur was also ranked 5th in the overall category,[25] 6th among research institutions,[26] 5th among engineering colleges[28] and 23rd among management schools[31] in India by the National Institutional Ranking Framework (NIRF) in 2023. Outlook India ranked IIT Kanpur 5th among government engineering colleges[30] in 2022. IIT Kanpur was ranked 6th in the QS India Rankings of 2020.[27] In, India Today Best Engineering Colleges 2022, IIT Kanpur was ranked 3rd.[29]

Laboratories and other facilities

Department of Computer Science and Engineering at IIT Kanpur

Samtel Research and Development Building

The campus is spread over an area of 4.3 square kilometres (1,100 acres). The institute has its own airfield for flight testing and gliding. The departments have their own libraries, laboratories and research facilities including the National Wind Tunnel Facility.

Research centres at IIT Kanpur include:[32]

Advanced Centre for Electronic Systems (ACES)

Advanced Centre for Material Science (ACMS)

Centre for Environmental Science and Engineering

Centre for Ganga River Basin Management and Studies

Centre for Lasers and Photonics

Centre for Mechatronics

Centre for Nanosciences

Centre for Technology for Sustainable Development

DIA Centre for Excellence

Interdisciplinary Centre for Cyber Security and Cyber Defense of Critical Infrastructures

Mehta Family Centre for Engineering in Medicine

National Information Centre of Earthquake Engineering

Prabhu Goel Research Centre for Computer and Internet Security

Samtel Centre for Display Technologies

PK Kelkar Library (formerly Central Library) is an academic library of the institute with a collection of more than 300,000 volumes, and subscriptions to more than 1,000 periodicals. The library was renamed to its present name in 2003 after Dr. P K Kelkar, the first director of the institute. It is housed in a three-story building, with a total floor area of 6973 square metres. The Abstracting and Indexing periodicals, Microform and CD-ROM databases, technical reports, Standards and thesis are in the library. Each year, about 4,500 books and journal volumes are added to the library.

The Western Labs

The New Core Labs (NCL) is 3-storey building with state of the art physics and chemistry laboratories for courses in the first year. The New Core Labs also has Linux and Windows computer labs for the use of first year courses and a Mathematics department laboratory housing machines with high computing power.

IIT Kanpur has set up the Startup Innovation and Incubation Centre (SIIC) (previously known as "SIDBI" Innovation and Incubation Centre) in collaboration with the Small Industries development Bank of India (SIDBI) aiming to aid innovation, research, and entrepreneurial activities in technology-based areas. SIIC helps business Start-ups to develop[clarification needed] their ideas into commercially viable products.

A team of students, working under the guidance of faculty members of the institute and scientists of Indian Space Research Organisation (ISRO) have designed and built India's first nano satellite Jugnu, which was successfully launched in orbit on 12 Oct 2011 by ISRO's PSLV-C18.[33]

Computer Centre

The Computer Centre is one of the most advanced computing service centres among academic institution in India. It hosts the IIT Kanpur website and provides personal web space for students and faculties. It also provides a spam filtered email server and high speed fibre optic Internet to all the hostels and the academic areas. Users have multiple options to choose among various interfaces to access mail service. It has Linux and windows laboratories equipped with dozens of high-end software like MATLAB, Autocad, Ansys, Abaqus etc. for use of students. Apart from departmental computer labs, computer centre

hosts more than 300 Linux terminals and more than 100 Windows terminals and is continuously available to the students for academic work and recreation. Computer centre has recently adopted an open source software policy for its infrastructure and computing. Various high-end compute and GPU servers are remotely available from data centre for user computation.

The computer centre has multiple super computing clusters for research and teaching activity. In June 2014 IIT Kanpur launched their second supercomputer which is India's fifth[34] most powerful supercomputer as of now. The new supercomputer 'Cluster Platform SL230s Gen8' manufactured by Hewlett-Packard has 15,360 cores and a theoretical peak (Rpeak) 307.2 TFlop/s and is the world's 192nd most powerful supercomputer as of June 2015.[35] Recently, IIT Kanpur has developed a compressed air-based mineral transport system. The project was presented at the Global Investors Summit, in 2023. It received good feedback for its less material loss, reduced air pollution, and efficiency to reduce travel time to a great extent. The main objective of the system is to transport coal and slurry. [36]

ŚIKṢĀ: Study Centre for Indian Knowledge System for Holistic Advancement

The mission of the ŚIKṢĀ Centre for Indian Knowledge System at IIT Kanpur is to promote, facilitate, and benefit from IKS-related studies, research, content development and outreach. The vision of the Centre is to establish IITK at the forefront of IKS studies in the world. ŚIKṢĀ Website

Gangwal School of Medical Sciences and Technology

Innovative and ambitious project of IIT Kanpur is the Gangwal School of Medical Sciences and Technology. Future innovations in medicine and healthcare will be driven by technological interventions. Website[permanent dead link]

Kotak School of Sustainability

The Kotak School of Sustainability at IIT Kanpur aims to excel in sustainability education, research and innovation, technology development, entrepreneurship, and outreach. The school will spearhead the development of holistic end-to-end technology solutions for sustainable development for a healthy planet and species. Website

Students' research and related activities

Research is controlled by the Office of the Dean of Research and Development (DoRD). Under the aegis of the Office the students publish the quarterly NERD Magazine (Notes on Engineering Research and Development) which publishes scientific and technical content created by students. Articles may be original work done by students in the form of hobby projects, term projects, internships, or theses. Articles of general interest which are informative but do not reflect original work are also accepted. The institute is part of the European Research and Education Collaboration with Asia (EURECA) programme since 2008.[37]

Along with the magazine, a student research organisation, PoWER (Promotion of Work Experience and Research) has been started. Under it several independent student groups are working on projects like the Lunar Rover for ISRO, alternate energy solutions under the Group for Environment and Energy Engineering, ICT solutions through a group Young Engineers, solution for diabetes, green community solutions through ideas like zero water and zero waste quality air approach. Through BRaIN (Biological Research and Innovation Network) students interested in solving biological problems get involved in research projects like genetically modifying fruit flies to study molecular systems and developing bio-sensors to detect alcohol levels. A budget of Rs 1.5 to 2 crore has been envisaged to support student projects that demonstrate technology.

Defence

Assisting the Indian Ordnance Factories in not only upgrading existing products, but also developing new weapon platforms.[38]

Jugnu

The students of IIT Kanpur made a nano satellite called Jugnu, which was given by president Pratibha Patil to ISRO for launch. Jugnu is a remote sensing satellite which will be operated by the Indian Institute of Technology Kanpur. It is a nanosatellite which will be used to provide data for agriculture and disaster monitoring. It is a 3-kilogram (6.6lb) spacecraft, which measures 34 centimetres (13 in) in length by 10 centimetres (3.9 in) in height and width. Its development programme cost around 25 million rupees. It has a design life of one year. Jugnu's primary instrument is the Micro Imaging System, a near infrared camera which will be used to observe vegetation. It also carries a GPS receiver to aid tracking, and is intended to demonstrate a microelectromechanical inertial measurement unit.

IITK Motorsports

IITK motorsports is the biggest and most comprehensive student initiative of the college, founded in January 2011. It is a group of students from varied disciplines who aim at designing and fabricating a Formula-style race car for international Formula SAE (Society of Automotive Engineers) events. Most of the components of the car, except the engine, tyres and wheel rims, are designed and manufactured by the team members themselves. The car is designed to provide maximum performance under the constraints of the event, while ensuring the driveability, reliability, driver safety and aesthetics of the car are not compromised.[39]

Maraal UAVs

Researchers at IIT Kanpur have developed a series of solar powered UAVs named MARAAL-1 & MARAAL-2. Development of Maraal is notable as it is the first solar powered UAV developed in India. Maraal-2 is fully indigenous.[40]

Student life

National events

Antaragni: The annual cultural festival of IIT Kanpur, which was started in 1965, is held in October every year.[41] The festival includes musical performances, dramas, literary games, folk dances, fashion shows and quizzes.[42]

Techkriti: The annual four-day inter-collegiate technical and entrepreneurship festival usually held in March. It was started in 1995 with an aim to encourage interest and innovation in technology among students and to provide a platform for industry and academia to interact.[43] Megabucks (a business and entrepreneurship festival) used to be held independently but was later merged with Techkriti in 2010. Notable speakers at Techkriti include APJ Abdul Kalam, Vladimir Voevodsky, Douglas Osheroff, Oliver Smithies, Rakesh Sharma, David Griffiths and Richard Stallman.

Udghosh: IIT Kanpur's annual sports festival usually held in September.[44] It started in 2004 as an inter-college sports meet organised by the institute. Udghosh involves students from across India competing in the university's sports facilities. The festival includes motivational talks, a mini-marathon, gymnastic shows, and sport quizzes related to various sports events.

Vivekananda Youth Leadership Convention: An annual convention organised on the birth anniversary of Swami Vivekananda by Vivekananda Samiti, under Students Gymkhana with a focus on leadership, social innovation, and youth empowerment among students.[45][46] The convention has included Kiran Bedi, Bana Singh, Yogendra Singh Yadav, Raju Narayana Swamy, Arunima Sinha, Rajendra Singh and other personalities from different fields in previous years.

E-Summit: Started in 2013 as the flagship event of Entrepreneurship Cell, IIT Kanpur, E-Summit is held annually for three days to promote entrepreneurship among students. It consists of various competitions, workshops and talks by eminent personalities in the domains of venture capital, product design and social entrepreneurship.[47]

Students' Gymkhana

The Students' Gymkhana is the students' government organization of IIT Kanpur, established in 1962.[48]

The Students' Gymkhana functions mainly through the Students' Senate, an elected student representative body composed of senators elected from each batch and the six elected executives:

President, Students' Gymkhana.

General Secretary, Media and Culture.

General Secretary, Games and Sports.

General Secretary, Science and Technology.

General Secretary (UG), Academics and Career

General Secretary (PG), Academics and Career

The number of senators in the Students' Senate is around 50–55. A senator is elected for every 150 students of IIT Kanpur.

The meetings of the Students' Senate are chaired by the chairperson, Students' Senate, who is elected by the Senate. The Senate lays down the guidelines for the functions of the

executives, their associated councils, the Gymkhana Festivals and other matters pertaining to the Student body at large.

The Students' Senate has a say in the policy and decision-making bodies of the institute. The president, Students' Gymkhana and the chairperson, Students' Senate are among the special invitees to the Institute Academic Senate. The president is usually invited to the meetings of the board of governors when matters affecting students are being discussed. Nominees of the Students' Senate are also members of the various standing Committees of the Institute Senate including the disciplinary committee, the Undergraduate and Postgraduate committee, etc. All academic departments have Departmental Undergraduate and Post Graduate Committees consisting of members of the faculty and student nominees.

Indian Institute of Technology Kharagpur

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Contact Person For Admission:	Mr. Santanu Das
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About the Institute

The Indian Institute of Technology Kharagpur was founded in 1951. A forerunner of the other IITs, and in many ways a role model for them, IIT Kharagpur has been producing scientists and technologists of the highest calibre who continue to provide leadership in education, research, industry, and management. Many of its alumni are illustrious men and women whose achievements command admiration and respect everywhere and evoke a just sense of pride in the IIT community.

Situated 120 km west of Kolkata, Kharagpur can be reached in about two and a half hours by train from the Howrah railway station of Kolkata. Kharagpur is also connected by direct train service to other major cities of the country. The Institute is about 10 minute's drive (5 km) from Kharagpur railway station. Located in a sylvan landscape, far from the heat and dust of the city, the campus provides a calm and serene environment for dedicated academic pursuits. IIT Kharagpur has two fully operational extension centres, one at Kolkata and the other at Bhubaneswar, besides the main campus at Kharagpur, which is the largest in the country. The Institute has completed construction of a first-of-its-kind research and innovation park at Rajarhat. The Park will have facilities to house collaborative research laboratories of partner organisations, incubation units and other academic and research facilities, amenities and utility units. These will be connected with the main campus at Kharagpur to enable e-facilities for conduction of academic and research activities. IIT Kharagpur has the largest number of PG and UG programmes and has a large number of doctoral research scholars. It offers 21 undergraduate (B.Tech., B.Arch., B.S., LLB (IP Laws)), 87 postgraduate (M.Tech., Dual Degree, M.C.P., MBA, MHRM, MMST, LLM) and research (M.S., Ph.D., D.Sc.) programmes.

IIT Kharagpur has been a prime mover in the modernization of technical education in independent India. Excellent research facilities and support in the frontier areas of science and technology are available at IIT Kharagpur, which includes some of the most advanced laboratories and the largest technical library in the country housing a state-of-the-art electronic library. All the departments and centres are equipped with modern instruments. Central Research Facility caters to the special needs of all including outside organizations. The Central Library of IIT Kharagpur is one of the largest and finest technical libraries in Asia. It has been catering to the needs of the twelve thousand students of undergraduates, postgraduates, research scholar, seven hundred faculty members and more than thousand staff members. The Institute also houses an Astronomical Observatory set up by the Positional Astronomy Centre, Government of India. A well-equipped centre for Education Technology, and Language and Psychology laboratories are additional assets. Many special purpose top rung laboratories have been created in IIT Kharagpur out of the R&D grants received from Industries, Government, Defence and from Alumni Contributors. A large Computer and Informatics Centre, a new wing for Information Technology, free wireless internet throughout the campus, computer network for halls of residence, students' hostels rooms and a capacious lecture hall complex are fully operational. Some of the laboratories are: a world class VLSI Design Laboratory, Communication Empowerment Laboratory, Media Lab Asia, Microsoft Laboratory, Motorola Laboratory, Centre for Excellence in Composite Technology, Ocean Science and Technology Cell, Advanced Technology Development Centre, Space Technology Cell, etc. Vinod Gupta School of Management (VGSOM) and G S Sanyal School of Telecommunications (GSST), School of Infrastructure Design and Management, School of Intellectual Property Law offering LLB and LLM programs are the first of their kinds in the IIT system, owe their existence to the generous contributions from its alumni. IIT Kharagpur is the first to plan establishment of multispeciality hospital and Medical School and would be offering MBBS programs in the near future.

Fee Structure

FEE STRUCTURE FOR UNDER GRADUATE STUDENTS ADMITTED IN THE SESSION
2023-24

Sl. No.	Heads Description	For Autumn Semester 2023-24 (Rs.)
1	Tuition Fee (For B.Tech/B.Arch/4Yrs B.S./Dual Degree) :	
	(i) SC/ST/PwD#	Nil
	(ii) Parent/Guardians Annual income < Rs.100000.00 p.a.	Nil
	(iii) Rs.100000 p.a<=Parent/Guardians Annual income < = Rs.500000.00 p.a.	33333
	(iv) Parent/Guardians Annual income > Rs.500000.00 p.a.	100000
2	One time payment at the time of admission : (only for First Year Students)	
	(a) Statutory Fee	1500
	(b) Medical Exam, Students Welfare & Modernization Fee (Rs.200+300+700/-)	1200

(c)	Hostel Admission Fee & Alumni Subscription (Rs.1000 + 2000/-)	3000
(d)	Institute, Library & Hostel Caution Deposit (Rs.1000 + 1000 + 4000/-) (Refundable)	6000
4 Semester Fee :		
(a)	Exam., Registration, Gymkhana, Medical Reg., Hostel Seat rent, Elect. & Water charges (Rs.500+400+600+200+750+1000/-)	3450
(b)	Student Amenities, Lab Contingency Fee, Internet connectivity (Rs.800+800+600/-)	2200
(c)	TFS	100
(d)	Student Insurance Policy	2500
(e)	Student Brotherhood Fund	200
(f)	Hostel Overhead Charges	880
(g)	Hall Establishment Charges	18300
(h)	Mess Charges	14000
(i)	Hall Budget	1000

Total (Excluding Tuition Fee)	36578
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1. Fee for PIO/OCI Card holders are as per GE / OPEN category of Indian National

2 Fees for Foreign Students:

a. Other than SAARC countries : Tuition Fee Rs. 6.0 lakh per annum + other charges as applicable

b. SAARC countries : Tuition fee Rs. 2.0 lakh per annum + other charges as applicable

NB: The fee structure shown here is tentative. Candidates are advised to contact and get confirmation at the time of admission.

Academic Structure

FOUR YEAR B.TECH COURSES

4101: AEROSPACE ENGINEERING

Aerospace engineering deals with the science of flying vehicles heavier than air. Aerospace also deals with science to fly in the atmosphere of Earth (aeronautics) and surrounding space (astronautics). Aerospace Engineering mainly deals with four distinct disciplines e.g., Aerodynamics, Aerospace Structures, Flight Mechanics/Space Dynamics and Control, and Propulsion. Aerodynamics is the study of how gases interact with moving bodies. Because the gas that we encounter most is air, aerodynamics is primarily concerned with the forces of drag and lift, which are caused by air passing over and around solid bodies. Aerospace structures differ from other structures due to their high demands for performance and lightweight.

Aerospace structures explore the structural and material design of aircraft and spacecraft from the viewpoint of an aerospace engineer. Modern aerospace structures typically require the use of composite materials, advanced multi-functional materials and thin-walled constructions. Flight mechanics are relevant to fixed wing (gliders, aeroplanes) and rotary wing (helicopters) aircraft. The smooth flight of modern airplanes is mainly dependent on automatic control and sophisticated Flight Mechanics models. On the other hand Space Dynamics deals with the satellite orbital motion and its orientation control. This forms the backbone of modern communication and extra-terrestrial exploration. Propulsion means to push forward or drive an object forward. The term is derived from two Latin words: pro, meaning before or forward; and pellere, meaning to drive. A propulsion system consists of a source of mechanical power, and a propulsor (means of converting this power into propulsive force). A technological system uses an engine or motor as the power source (commonly called a power plant), and wheels and axles, propellers, or a propulsive nozzle to generate the force. Components such as clutches or gearboxes may be needed to connect the motor to axles, wheels, or propellers. In a concise form one can say that the aerospace engineers are concerned with the analysis and design,

construction, testing and operation of flight vehicles, including aircraft, helicopter, rockets and spacecraft. The course is based on the fundamentals of aerodynamics, solid mechanics and aircraft structural materials, structural analysis, propulsion, aerospace vehicle design, space dynamics, automatic control and guidance, and development of flight control software.

IIT Kharagpur aerospace department deals with all the above aspects of a flight vehicle. Drones and its control technology, path planning and many other areas of strategic importance are currently being developed by dedicated faculty members. IIT Kharagpur has supported the development of Advanced Medium Combat Aircraft technologically. Moreover, some classified technologies for aircraft are in the channel of development. In addition, an innovation lab is planned where undergraduate students can develop new technologies. Many other research activities are going on in which students can participate and learn.

4102: AGRICULTURAL AND FOOD ENGINEERING

With increase in growth and associated industrial potential, Indian agriculture has now been accorded the status of an industry. The course on Agricultural and Food Engineering aims at producing engineering graduates to meet the requirement of technical manpower in development of farm machines, land and water resources management, agricultural production and processing and preservation of food products. In order to meet the present demand of agricultural and food industries, the course has been suitably modified to include specialized training in design, development, testing and selection of tractors and farm implements, irrigation, drainage and watershed management using Remote Sensing and GIS; information technology, processing of food, fodder and fibre, utilization of biomass, by-products and wastes in the production of biochemicals, fuels, manure and non-conventional energy. The course provides ample flexibility to the students for acquiring expertise in any of the three major areas of specialization, namely, Farm Machinery and Power, Land and Water Resources Engineering, and Food Process Engineering as well as three interdisciplinary areas of Agricultural Biotechnology, Aquacultural Engineering and Agricultural Systems Management.

4105: BIOTECHNOLOGY AND BIOCHEMICAL ENGINEERING

This four-year B.Tech course was introduced in 1994, first in IIT system, and is a multi-disciplinary program in engineering of biological systems provides world-class exposure in natural, biological, and engineering sciences including interfacial basics of computational, artificial intelligence and management subjects. First year courses are common as in other engineering disciplines. The course builds competence in scholastic aptitude for fundamental research in wider areas relevant to biological sciences and bioengineering in one hand and provides excellent hands on exposure for career in biotechnology and related industries on the other. The course is highly multidisciplinary one and students can take minor in other core engineering subjects for acquiring expertise to suit their research interest/placement.

The course structure not only provides solid foundation in Biochemistry, Genetics, Cell and Molecular biology, Microbiology and Immunology etc., but also built expertise in Microbial and Environmental biotechnology, Metabolic and Protein engineering, Computational biology and Bioinformatics, Downstream processing, Process engineering related subjects etc.

The laboratory classes are supported by sophisticated Departmental and Central facilities. The Faculty members are well connected /collaborated globally and pursue advanced research in

various cutting-edge topics of biological sciences and bioengineering. The alumni are spread all over the world and are making remarkable contributions.

4107: CHEMICAL ENGINEERING

Chemical engineers work in diverse fields dealing with fundamental understanding of chemical processes leading to products. The areas may include a plethora of choices from molecular modeling of functional materials, process and product development, cost and quality optimization, computer aided process design and control and intervention of processes through machine learning and expert systems. The conventional courses in chemical engineering provide unique training in transfer operations and reaction engineering leading to efficient management of resources in advanced processes. The budding chemical engineers learn fabrication and design of process plants, petroleum refining and petrochemicals, synthetic fibers, speciality chemicals, food and pharmaceuticals, energy harvesting-conversion-storage and prevention and control of environmental pollution. In addition, the academic structure of the Department incorporates several interdisciplinary areas like AI, sensors, distributed control systems, microfluidics and biosystems, numerical optimization, and material science. The department welcomes students from their second year to become associated with the multitude of ongoing projects in cutting edge research areas to satisfy their intellectual curiosity and be trained.

The thrust areas of the department are 1) Transport processes in Multiphase, multiscale and Structured Fluids, 2) Reaction Engineering and Separation Technology, 3) Materials and Interfacial Science, 4) Modeling and Simulation of Chemical Processes, 5) Clean Technology, 6) Biofuel, Petroleum and Petrochemicals

Note: The Institute may permit a limited number of students from this branch to opt for any of the M.Tech Dual Degree in Chemical Engineering, Petroleum Engineering, Financial Engineering, Engineering Entrepreneurship and complete both the degrees in five years. For details of Petroleum Engineering Program, please see the sub-heading titled as INTERDISCIPLINARY DUAL PETROLEUM ENGINEERING PROGRAM at the end of this section.

4109: CIVIL ENGINEERING

A civil engineer is concerned with planning, analysis, design, construction and maintenance of a variety of facilities such as buildings, highways and railways, airports, waterways and canals, dams and power houses, water treatment and waste water disposal systems, environmental quality control, docks and harbours, bridges and tunnels. A civil engineer is also required to deal with critical problems of today such as disaster mitigation and management, constructing offshore structures for oil production, flood forecasting and flood control, traffic congestion, transportation planning, use of non-conventional energy resources, for example, wind, tides, waves, etc. The breadth and diversity of the civil engineering profession make it particularly attractive. Computer Aided Design (CAD) and software development for various civil engineering facilities have become integral parts of civil engineering profession.

4110: COMPUTER SCIENCE AND ENGINEERING

Computer science and Engineering involves the study of software, hardware, and theoretical aspects of computing, along with the study of the application of engineering concepts, techniques, and methods to systems engineering.

The B.Tech. course provides a well-rounded Computer Science education with theory, hardware, software, systems and application aspects. The core courses provide a solid foundation in the theory and practice of computer science. There is a good balance of core courses covering theoretical aspects of Computer Science as well as important courses in algorithms, computer software, hardware and systems. Most core courses have very strong laboratory components that supplement the theory components. In addition to the core courses, a wide variety of elective courses are offered in different areas such as algorithms, artificial intelligence and machine learning, cryptography and security, VLSI design and embedded systems, formal methods etc. The courses are continually updated and new electives are added frequently.

4111: ELECTRICAL ENGINEERING

This BTech (Hons) degree programme relates to the broad disciplines of Electrical Sciences and Technologies. Apart from providing solid fundamentals in signals and systems modelling and analysis, electrical and electronic circuits, measurements and machines, this course also builds expertise in major application areas such as Control Systems, Power Systems, Power Electronics and Machine Drives, Instrumentation and Integrated Electronics, Signal Processing and Machine Learning as well as computer hardware, software, and programming. The course structure provides significant opportunities to specialise in areas such as Artificial Intelligence and Machine Learning, Communication Systems, Integrated Circuits, VLSI, MEMS, Instrumentation, sensors, Fractional order devices, Industrial Automation, Renewable Energy Systems, Image Processing and Computer Vision, Robotics, Electric Vehicles, Finance, Management and Entrepreneurship etc. There are opportunities to work with industry and national and international R&D organisations.

4115: ELECTRONICS AND ELECTRICAL COMMUNICATION ENGINEERING

The course is a judicious combination of core subjects and professional electives. The core subjects provide a sound foundation in areas like electronic devices, circuits, control, signals and networks, computers and communications, and electromagnetics. The foundation is strengthened by depth subjects in microelectronics, microwaves, communication, computers, digital signal processing, etc. The breadth subjects in Mathematics, Sciences, Humanities, Management, etc. widen the scope of the course. The course lays considerable emphasis on the laboratory classes. The course accommodates students' special interests through professional elective subjects in the areas of microelectronics and VLSI engineering, visual information processing and embedded systems, telecommunication systems engineering, RF and microwave engineering, Fibre Optics and light-wave engineering. New elective subjects are added from time to time to cater to the future technological needs. The curriculum also includes industrial training. The curriculum makes a balance between excellent industrial prospects as well as higher studies in any branch of electronics and communication engineering.

4170: BTECH IN INDUSTRIAL ENGINEERING

Industrial Engineering (IE) is concerned with the design, analysis, and optimization of complex processes and integrated systems by using various tools and techniques such as optimization, data analytics, mathematical programming, statistical learning, simulation, stochastic modelling, system dynamics. The Department of Industrial and Systems Engineering (ISE) at IIT Kharagpur was established in 1973 and is the first department of its kind in India. B.Tech. programme in IE at ISE offers a diverse range of core and elective courses in the areas of operations research, data analytics, logistics and supply chain management, project management, production and product system design, systems engineering, product development, quality control and engineering, human factors and ergonomics, safety engineering and virtual reality, e-commerce, and technology management, etc. ISE houses state of the world laboratory facilities to impart hands-on training to the students complementing the theoretical concepts introduced in class. The students graduated from the ISE are recruited by industries in Analytics Firms, IT/Software Services, Manufacturing/FMCG Consultancies and Financial Firms.

To know more detail, please visit us at <http://www.iem.iitkgp.ac.in>

4121: INSTRUMENTATION ENGINEERING

This BTech (Hons) degree programme pertains to sciences and technologies related to Instrumentation Devices and Systems, Signal Processing, as well as major application areas for these. Apart from providing solid fundamentals in signals and systems modelling and analysis, electrical and electronic circuits and measurements, sensors, data communication, this course also builds expertise in major application areas such as process control systems, instrumentation systems, digital signal and image processing, as well as computer hardware, software and programming. The course structure provides significant opportunities to specialize in areas such as Artificial Intelligence and Machine Learning applications, Communication Systems, VLSI and MEMS Integrated Circuits, Industrial Automation, Biomedical and Healthcare Systems, Image Processing and Computer Vision, Optoelectronics, Robotics, Electric Vehicles, Finance, Management and Entrepreneurship etc. There are opportunities to work with industry and national and international R&D organisations.

4122: MANUFACTURING SCIENCE AND ENGINEERING

The Manufacturing Science and Engineering Programme is designed to create a specialized breed of engineers-cum-managers, who are expected to evolve, build and manage with global outlook, a new class of physically distributed enterprises. The programme first builds a solid background of manufacturing systems and processes, with exposure to basic courses in engineering design and thermal sciences. It covers subjects like quality control, CAD, CAM, AI, CIM, Robotics, etc. The students are also exposed to state-of-the-art developments in micro-mechanical systems and intelligent systems driven by continuous innovation in product and process technologies. The programme, with its fine blend of advanced manufacturing technologies and broad based IT and management skills, is ideal for students who wish to take up challenging careers in engineering management and innovative system entrepreneurship

4125: MECHANICAL ENGINEERING

Mechanical Engineering is concerned with the design, operation and maintenance of machines and their components, mechanisms, machine tools, manufacturing systems and processes, components of thermal power systems including internal combustion engines and turbo

machinery, solar energy, heat transfer, air-conditioning, refrigeration and industrial engineering including production planning and control. The students of mechanical engineering have an opportunity to study both the fundamentals and applied aspects of these areas.

Note_: The Institute may permit a limited number of students from this branch to opt for M.Tech Dual Degree in Petroleum Engineering. For details _please see the sub-heading titled as INTERDISCIPLINARY DUAL PETROLEUM ENGINEERING PROGRAM at the end of this section.

4127: METALLURGICAL AND MATERIALS ENGINEERING

Advances in technology depend on the availability of high performance materials. The field of engineering materials has expanded enormously in the recent past and has encompassed a variety of materials such as ceramics, polymers, electrical and magnetic materials, semiconductors, glasses and composites, along with the traditionally important metals and alloys for various functional and structural applications. Critical selection of such materials for advanced engineering applications in various technology areas such as construction, automotive, aerospace, and thermal/hydel/nuclear power industries, as well as energy storage and electronic communications, is of utmost importance. B.Tech. programme encompassing metallurgical engineering and materials science/engineering have been designed to train engineering graduates, who would be highly competent in meeting the emerging needs of India in advanced materials as well as in conventional metallurgical engineering. Comprehensive programmes of studies allow the student to grasp the fundamentals of metal extraction, as well as processing to obtain near net shapes, selection, structural and mechanical characterization, as well ability of engineering materials to resist degradation in extreme environments. A wide variety of electives available during the third and fourth years of study give an opportunity to the student to concentrate in an area of his/her choice.

4130: MINING ENGINEERING

Mining Engineering, a 4-year B.Tech. programme is concerned with the production of minerals and coal. The field of study exposes the students to aspects of surveying, planning, design, construction, mineral excavation, transportation, maintenance, safety, and management of mines. Courses in the first two years provide the students with essentials of science, basic engineering, computing, and information technology. In the subsequent years, a group of core and elective subjects including methods of mining, geomechanics, numerical methods, environmental engineering, industrial management, computer-aided mine planning, remote sensing and geographic information system (GIS) are taught to keep pace with the latest developments in mining technology and to meet the present demands of the industry.

Note_: The Institute may permit a limited number of students from this branch to opt for M.Tech Dual Degree in Petroleum Engineering. For details _please see the sub-heading titled as NEW INTERDISCIPLINARY DUAL PETROLEUM ENGINEERING PROGRAM at the end of this section.

4133: OCEAN ENGINEERING AND NAVAL ARCHITECTURE

In its broadest sense, Ocean Engineering and Naval Architecture (OENA) is concerned with all engineering systems operated in the ocean environment. This includes systems for exploring and exploiting vast oceanic resources such as offshore oil and gas, seabed minerals, and renewable energy. OENA also involves systems that utilize the ocean for transportation, such as ships and

marine crafts, submarine and underwater remotely operated vehicles, recreational crafts, floating resorts, etc. Waterways transportation being a cost-effective transportation mode, has good economic potential. Developing effective transportation involves designing efficient propulsive and effective manoeuvring mechanisms along the waterways. Yet another important component of OENA is related to the protection of coastlines, simulation of marine hazards and their mitigation through engineering solutions. Given the issues related to climate change and the vast coastline, this is an important focus area for India. Exploring various sources of Renewable energy sources from waves, tidal currents and offshore wind is a focus area at OENA. The Subsea engineering related to offshore oil exploration is also explored at OENA. Ocean Engineering and Naval Architecture encompasses subjects such as Fluid Mechanics, Marine Hydrodynamics, Ocean Wave Analysis, Solid Mechanics, Manoeuvring and Propulsion mechanics for marine vehicles, design of marine structures for static and dynamic loading, marine construction and welding, coastal engineering, physical & dynamical oceanography, port & harbour engineering, subsea installations, renewable wave energy extraction etc. In the five years of this dual degree M.Tech., the students can specialize in any of the broad areas of Ocean Engineering and Naval Architecture, such as marine and ocean hydrodynamics, marine structures, design and construction of marine vehicles, coastal engineering, ocean environment etc. through project and specialized courses. The prolonged period of project work allows a student to gain expertise in one of these broad areas. Employment opportunities for Ocean Engineers and Naval Architects exist in various offshore industries, shipbuilding and ship repairing yards, marine classification societies, government regulatory bodies dealing with marine systems, Navy and Coast Guard, Coastal Engineering companies, Naval Defence R&D, environmental protection agencies for coastal protection, etc. Being multidisciplinary in nature, students from this program generally receive a broad engineering background, and this helps to find employment in other allied engineering fields.

FIVE-YEAR B. ARCH. COURSE

5101: ARCHITECTURE

Architect is a professional who designs buildings and built environments, landscapes interiors, and acts as the leading coordinator for the entire construction project from conception to completion. Architecture is the “art and science of building” and an Architect’s education needs to be a perfect balance between art, science and technology. As an architecture student, one is encouraged to develop one’s creative talents and artistic skills, as well as hone one’s analytical aptitude for social and cultural awareness, research in various domains, building science and technological innovation. The role and importance of an architect in society has been acknowledged since time immemorial, and assumes special significance in today’s world where buildings and spaces serve complex and diverse functions and need expert monitoring and coordination. Further, through the rigorous, but enjoyable learning through the B. Arch course, a well rounded personality with good communication skills and human values is facilitated.

Architectural education equips a student with basic design and visual arts skills, as well as a thorough knowledge of building materials, methods of construction, structural principles and innovations and other related technological aspects of building (like air conditioning, acoustics, illumination and intelligent systems). The student is also exposed to hard-core construction issues such as construction project management, professional practices, specification, estimation and arbitration. There is a strong emphasis on practical training, whereby the student works as a professional apprentice in an established architectural firm for almost the entire ninth semester. The final semester consists of a complete real-life architectural project handled

single-handedly by the student which is a true simulation of entire scope of works, responsibilities and liabilities of a practicing architect. On completion of five years of education, the Council of Architecture (India) offers a professional license to the architect for independent practice in the profession.

The professional opportunities for a graduate architect are diverse. Apart from the option of independent practice or expert consultancy, an architect may gain employment in professional consulting or construction firms, private, public or government organizations, as well as pursue higher research, industrial or teaching careers. The avenues of higher studies and research open to a graduate architect are also wide ranging. The related research areas include Masters in Architecture, Urban design, Interior design, Landscape design, Industrial and Product design, City and regional planning, Transportation planning, Environmental planning, Heritage and conservation studies, Sociological aspects of human-built environment interface, Infrastructure design, Digital art and Visual communication, and Computer applications including design software programming, decision support systems and artificial intelligence.

Candidates desirous of joining the B. Arch (Honors) course will be required to qualify in an Architecture Aptitude Test (AAT-2012), as mentioned in the Information Brochure. Syllabus for the Architecture Aptitude Test is given below:

Freehand drawing: Simple drawing depicting the total object in its right form and proportion, surface texture, relative location and details of its component parts in appropriate scale. Common domestic or day-to-day life usable objects like furniture, equipment, etc., from memory.

Geometrical drawing: Exercises in geometrical drawing containing lines, angles, triangles, quadrilaterals, polygons, circles etc. Study of plan (top view), elevation (front or side views) of simple solid objects like prisms, cones, cylinders, cubes, splayed surface holders etc.

Three-dimensional perception: Understanding and appreciation of three-dimensional forms with building elements, colour, volume and orientation. Visualization through structuring objects in memory. Imagination and aesthetic sensitivity: Composition exercise with given elements.

Context mapping. Creativity check through innovative uncommon test with familiar objects.

Sense of colour grouping or application. Architectural awareness: General interest and awareness of famous architectural creations - both national and international, places and personalities (architects, designers etc.) in the related domain".

FIVE-YEAR M.TECH. DUAL DEGREE COURSES

In addition to the 4-year B.Tech. degree programmes, some dual degree (B.Tech. & M.Tech.) programmes are also available. The salient features of the dual degree programmes are:

Two degrees (B.Tech. & M.Tech.) will be given at the end of 5 years, but the requirements for B.Tech. degree will not be completed at the end of the 4th year.

Up to second year, the courses will be common with the corresponding 4-year B.Tech. programme. Fourth year onwards electives for dual degree students will be in the area of their M.Tech. specialization. Project work will start in summer of 4th year and extend through the 5th year (14 months).

5201: AEROSPACE ENGINEERING

Aerospace engineering deals with the science of flying vehicles heavier than air. Aerospace also deals with science to fly in the atmosphere of Earth (aeronautics) and space (astronautics).

Aerospace Engineering mainly deals with four distinct disciplines e.g., Aerodynamics, Aerospace Structures, Flight Mechanics and Control and Propulsion. Aerodynamics is the study of how gases interact with moving bodies. Because the gas that we encounter most is air, aerodynamics is primarily concerned with the forces of drag and lift, which are caused by air passing over and around solid bodies. Aerospace structures differ from other structures due to their high demands for performance and lightweight. Aerospace structures explore the structural and material design of aircraft and spacecraft from the viewpoint of an aerospace engineer. Modern aerospace structures typically require the use of composite materials, advanced multi-functional materials and thin-walled constructions. Flight mechanics are relevant to fixed wing (gliders, airplanes) and rotary wing (helicopters) aircraft. The smooth flight of modern airplanes and space vehicles mainly depend on automatic control and sophisticated Flight Mechanics models. Propulsion means to push forward or drive an object forward. The term is derived from two Latin words: pro, meaning before or forward; and pellere, meaning to drive. A propulsion system consists of a source of mechanical power, and a propulsor (means of converting this power into propulsive force). A technological system uses an engine or motor as the power source (commonly called a power plant), wheels and axles, propellers, or a propulsive nozzle to generate the force. Components such as clutches or gearboxes may be needed to connect the motor to axles, wheels, or propellers. In a concise form one can say that the aerospace engineers are concerned with the analysis and design, construction, testing and operation of flight vehicles, including aircraft, helicopters, rockets and spacecrafts. The course is based on the fundamentals of aerodynamics, solid mechanics and aircraft structural materials, structural analysis, propulsion, aerospace vehicle design, automatic control, navigation, guidance, flight vehicle dynamics, avionics and development of flight control software. IIT Kharagpur aerospace department deals with all the above aspects of a flight vehicle or spacecraft. Drones and its control technology, path planning and many other areas of strategic importance are currently being developed by dedicated faculty members. IIT Kharagpur has supported the development of Advanced Medium Combat Aircraft technologically. Moreover, some classified technologies for aircraft are in the channel of development. In addition, an innovation lab is planned where undergraduate students can develop new technologies. There are many other research activities going on in which students can engage and learn.

The M. Tech. program has a common core in the areas of Aerodynamics, Aerospace Technology, Design, Propulsion and Structures. A number of electives are available for specialization in areas related to Aerospace Engineering. Project work of fourteen months duration will be in one of the areas of design, analysis and control of modern aircraft, space vehicles, engines and flight machines. Modern experimental facilities are available for project work

5203: AGRICULTURAL AND FOOD ENGINEERING WITH M.TECH. IN ANY OF THE LISTED SPECIALIZATIONS

The department offers five specializations under the Dual Degree programme. A comprehensive coverage of all essential aspects of Agricultural & Food Engineering will be provided in the first three years. A dual degree student has the flexibility to opt for anyone of the following M.Tech. specializations based on his/her own choice and performance at the end of the third year:

- (i) Farm Machinery and Power
- (ii) Land and Water Resources Engineering
- (iii) Food Process Engineering

(iv) Aquacultural Engineering

(v) Agricultural Systems and Management

The course in Farm Machinery and Power aims at developing and disseminating engineering knowledge and skills for the mechanization of farm operations, utilization of farm power and alternative energy resources in sustainable agricultural production and environmental management. It also focuses on design and automation of farm machines and operations for precision agriculture with emphasis on ergonomics, safety and health.

The course in Land and Water Resources Engineering emphasizes on the interaction of land and water systems along with changing climate conditions in agricultural production and imparts knowledge and skills necessary for the proper development and management of land and water resources for agriculture. Students are trained on the fundamentals of surface and subsurface hydrology in general with a focus on sustainable land and water resources planning and management, including conjunctive use of surface and groundwater, management of water logging and Stalination in canal commands, integrated water resources management as well as climatic and socio-economic impacts on water resources. In-depth knowledge of modern tools and techniques such as Simulation and Optimization Modeling, Remote Sensing (RS), Geographic Information System (GIS) and Emerging Soft-Computing Techniques, together with their application to land and water resources (both quantity and quality) management are provided.

The course in Food Process Engineering is a balanced amalgamation of fundamental and applied sciences and engineering aspects of processing of food and perishables. It aims at imparting training to students for meeting the technological demands of various food industries dealing with processing of dairy and food products inclusive of beverages, cereals, pulses, oil seeds, fruits, vegetables, and plantation crops. Advanced knowledge in mechanical, thermal and mass transfer operations along with novel and advanced techniques are given major emphasis in the curricula through incorporation of compulsory and elective subjects like Food Process Modeling, Food Plant and Equipment Design, Food Packaging and Handling, Grain Storage Principles, Non-thermal Preservation of Foods, Instrumentation and Control in Food Industry, Computer Programming, food safety and standards etc.

The course in Aquacultural Engineering aims at imparting knowledge and skills for the development of aquacultural facilities and production of fish by applying the engineering principles and practices to aquaculture. To meet the demand of fisheries and several other organizations dealing with the engineering aspects of aquaculture, the students are trained in fishery biology, open channel hydraulics and coastal engineering, planning and design of aquacultural farms, aquacultural facilities and equipment, aquacultural systems analysis, fish processing and fishing crafts and gears.

The course in Agricultural Systems and Management aims at imparting knowledge and technical know-how for augmenting and sustaining agricultural productivity in the perspectives of limiting resources, degrading environment, and increasing demand for agricultural produce by applying the principles and practices of the systems approach to agricultural management. The program has an optimum mix of agricultural science, engineering and management courses with built-in flexibility through a large number of elective subjects.

This course is an extension of the 4-year B.Tech Programme. The course gives special emphasis on professional subjects, such as Recombinant DNA Technology, Immunotechnology, Biotechnology of Plant Metabolites, Bioseparation, Aspects of biochemical engineering, Bioprocess Plant and Equipment Design, Transgenic Technology, Microbial genomics and Metagenomics, Computational Structural Biology, Systems Biology, etc., in addition to the subjects covered in 4 year B.Tech program. It also includes special laboratory classes in the above areas. The Courses offered in the 5th year instill confidence and competence in areas of recombinant therapeutics, diagnostics, Bio processed food, new generation drug development, development of advanced bioreactors etc. The project work enables hands-on exposure and research planning necessary for a modern bio-industries or related R&D.

5210: CHEMICAL ENGINEERING

The major thrust of the dual degree course in Chemical Engineering is to prepare an incumbent for advanced applications in industry, R&D, and academics. The course imparts advanced concepts in specialized areas such as, computer-aided process engineering, intelligent automation and control, advanced separation processes, interfacial science, multiphase systems, biosystem engineering, nanosciences etc. A student with this degree is adequately equipped for taking up challenges in the newer areas in chemical engineering.

Note_: The Institute may permit a limited number of students from this branch to opt for an interdisciplinary dual degree at the end of first year. The options for M.Tech part of Dual Degree are Petroleum Engineering, Financial Engineering, and Engineering Entrepreneurship, alongside B.Tech degree in Chemical Engineering, where both the degrees are to be completed in five years. For details of Petroleum Engineering Program, please see the sub-heading titled as INTERDISCIPLINARY DUAL PETROLEUM ENGINEERING PROGRAM at the end of this section.

5215: CIVIL ENGINEERING WITH M.TECH. IN ANY OF THE LISTED SPECIALIZATIONS

The following specializations are available at Dual Degree level. The students will be able to exercise options for specialization after completing sixth semester. By then, they will have a better perspective of the specializations and will be in a position to make a right choice depending on their performance and preference of the subjects.

- Environmental Engineering and Management
- Geotechnical Engineering
- Hydraulic and Water Resources Engineering
- Structural Engineering
- Transportation Engineering

The programme is well designed to specialize a civil engineering graduate in any of the above areas through experimental and theoretical knowledge including applications of computer aided design. Past experience shows that the students who have an in-depth knowledge are more

capable and confident to take up the challenging assignments of a specialized professional civil engineer.

5216: COMPUTER SCIENCE AND ENGINEERING

Computer science and Engineering involves the study of software, hardware, and theoretical aspects of computing, along with the study of the application of engineering concepts, techniques, and methods to systems engineering.

The dual degree course is a combined B.Tech. and M.Tech. program. It provides a well-rounded Computer Science education with theory, hardware, software, systems and application aspects. The core courses provide a solid foundation in the theory and practice of computer science. There is a good balance of core courses covering theoretical aspects of Computer Science as well as important courses in algorithms, computer software, hardware and systems. Most core courses have very strong laboratory components that supplement the theory components. A large number of elective courses in different areas of Computer Science are available to the students such as algorithms, artificial intelligence and machine learning, cryptography and security, VLSI design and embedded systems, formal methods etc. The courses are continually updated and new electives are added frequently.

There is no fixed stream of specialization, and the students have the flexibility to choose elective courses enabling them to specialize in one or more subareas.

The dual degree course provides to the students a strong foundation on different aspects of Computer Science and Engineering and enables them to explore issues in Research and Development in depth, through specialized elective courses and a year-long final project. This provides opportunity to the students to develop specific professional goals. Both B.Tech. and M.Tech. degrees are given in Computer Science and Engineering at the end of five years.

FIVE YEAR DUAL DEGREE COURSES

5222: ELECTRICAL ENGINEERING WITH M.TECH. IN ANY OF THE LISTED SPECIALIZATIONS

This integrated dual degree program offers both the BTech (Hons) and the MTech degree in the chosen specialization on successful completion after 10 semesters. The academic curriculum is the same as that of the 4-year BTech (Hons) programme in Electrical Engineering for the first six semesters. From the 7th semester, the students begin to undertake postgraduate level courses in their respective areas of specializations, namely, Machine Drives and Power Electronics, Power and Energy Systems, Control Systems Engineering or Instrumentation and Integrated Electronics, Signal Processing and Machine Learning. Considerable flexibility exists in specialising in areas of interest by choosing electives. There is a substantial research oriented MTech project work for two semesters which can be done jointly with other departments in interdisciplinary areas as well as with other industrial and R&D organisations.

**5225: ELECTRONICS AND ELECTRICAL COMMUNICATION ENGINEERING WITH M.TECH.
IN ANY OF THE LISTED SPECIALIZATIONS**

The degree programme provides a sound foundation in Electronics and Electrical Communication Engineering through its B.Tech curriculum, and it also offers M.Tech degree in any of the specializations pursued by the department. Currently, the department pursues Microelectronics and VLSI Design; Telecommunication System Engineering; RF and Microwave Engineering; Visual Information Processing and Embedded Systems as the M.Tech specializations. The students are required to undergo the core theory courses and the corresponding laboratory courses pertaining to the specialization and opt for a prescribed number of elective subjects in the various emerging areas of their choice. The students are also required to complete an M.Tech dissertation in the firth year. The degree programme is designed to prepare a student to undertake research, development, teaching, or any other specialized professional career.

**5241: BTECH IN INDUSTRIAL ENGINEERING WITH MTECH IN INDUSTRIAL ENGINEERING
AND MANAGEMENT**

_In this integrated programme first four years are similar to the B.Tech programme in Industrial Engineering (4170: INDUSTRIAL & SYSTEMS ENGINEERING). Thereafter, the students are exposed to the integrative concepts of Industrial Engineering and Management by selecting electives from a list of advanced courses on logistics and supply chain management, production planning and control, systems modelling and analysis, intelligent manufacturing, financial engineering, facility layout and design, service operations management, human factors, safety and risk management, applied multivariate statistical modelling, e-business, and various cross department elective courses on artificial intelligence, machine learning to mention a few. The important part of this programme is one-year long project work that typically involves design and optimization of a real-life industrial system. It has been observed over the years that, the additional elective subjects and the extensive training during the project work, not only increase the employability of these students but also increase their chance of getting admitted to top ranked universities around the world.

**5281: MANUFACTURING SCIENCE AND ENGINEERING WITH M.TECH. IN INDUSTRIAL &
SYSTEMS ENGINEERING AND MANAGEMENT**

This dual degree programme is offered jointly by the Department of Mechanical Engineering and the Department of Industrial & Systems Engineering. The programme prepares the students to implement modern concepts of industrial and systems engineering in manufacturing and service organizations. Initially, the programme provides an in-depth background in the area of Manufacturing Sciences and Engineering with exposure to basic courses in Engineering Design and Thermal Sciences. Thereafter, the students are exposed to the tools and techniques of Industrial & Systems Engineering. The programme focuses on the efficient design and operation of production systems, and includes subjects in the areas of work systems design, production planning and inventory control, supply chain management, software engineering/e-business, financial management and accounting, quality engineering, project management, advanced decision modeling, simulation and related elective courses. During the course of study, the students need to carry out project work for one full year that should ideally involve design and optimization of a real-life industrial problem.

5239: MECHANICAL ENGINEERING WITH M.TECH. IN ANY OF THE LISTED SPECIALIZATIONS

The Dual Degree courses of the Department are designed to develop manpower with basic background in Mechanical Engineering with specialized knowledge in any of the major specific areas of Mechanical Engineering. Accordingly, the Department offers three

Dual Degree programmes which are as follows:

§ Mechanical Engineering with M.Tech. in Manufacturing Science and Engineering

This programme essentially covers the relevant topics like CAD, CAM, Robotics, Mechatronics, Flexible Manufacturing, to provide awareness of the state-of-the-art and future trends in manufacturing.

§ Mechanical Engineering with M.Tech. in Thermal Science Engineering

In this course the students are given an opportunity to specialize in one or more areas of thermal engineering with special emphasis on computational fluid dynamics, simulation, modelling and optimisation of complex thermal systems.

§ Mechanical Engineering with M.Tech. in Mechanical Systems Design

The course encompasses all the basic subjects of Mechanical engineering and specialized subjects on solid mechanics, machine vibrations, design optimisation, needed to become an efficient professional in the specialization of mechanical system design. Some of the subject areas are vibration and noise control, modelling and simulation of dynamics systems, dynamics & control of robots, machine tools & other complex mechanical systems, dynamics & control of smart structures, composite materials, machinery fault diagnosis and signal processing, mechatronics, rotor dynamics.

Note_: The Institute may permit a limited number of students from this branch to opt for M.Tech Dual Degree in Petroleum Engineering. For details _please see the sub-heading titled as _INTERDISCIPLINARY DUAL PETROLEUM ENGINEERING PROGRAM_ at the end of this section.

5243: METALLURGICAL AND MATERIALS ENGINEERING WITH M. TECH. IN METALLURGICAL AND MATERIALS ENGINEERING

It is a five-year programme with the first three and half years of studies common with the B.Tech. programme. Major emphasis of the remaining period will be on education in advanced areas through specialization courses and research. The student has the option to specialize, through a large number of postgraduate electives, in the fields of design and development of advanced materials for structural and functional applications, Process modeling and simulation, Nanoscience and nanotechnology, Phase transformation in materials, Deformation and fracture behaviour of materials, Particulate technology, Solidification processing and foundry technology, Extractive metallurgy, Environmental degradation of materials, and Surface Engineering.

5247: MINING ENGINEERING/MINING ENGINEERING WITH M.TECH. IN MINING ENGINEERING

This five-year dual degree course as offered lays greater emphasis on acquiring deeper knowledge, widens the scope of understanding of interdisciplinary subjects such as economics, management and advanced treatment of undergraduate subjects and on design and problem solving using computational techniques. The students would be able to enjoy wider choice of electives. The extensive project work provides opportunity for the students to analyze, to synthesize, and to creatively apply fundamental engineering principles to new problems and make useful and original contributions to this branch of engineering.

The dual degree programme has a multi-faceted orientation with blend of core mining engineering subjects, professional courses and allied courses relevant to the mining engineers in present global scenario. The mining engineers are concerned with mine planning, design, exploitation and processing of ore/coal. Salient course structure gives coverage on the fundamentals of basic science and engineering, mining geology, mine surveying, mine development, mine ventilation, rock mechanics, underground and surface coal & metal mining methods, environmental management, mining methods, mining machinery, mineral processing and other allied subjects. This course will be followed by PG seminar and research-based dissertation work.

Note_: The Institute may permit a limited number of students from this branch to opt for M.Tech Dual Degree in Petroleum Engineering. For details _please see the sub-heading titled as NEW INTERDISCIPLINARY DUAL PETROLEUM ENGINEERING PROGRAM at the end of this section.

5248: MINING SAFETY ENGINEERING

Considering the importance of occupational health and safety, The Department of Mining Engineering has introduced this Dual Degree course with B.Tech, (Honors) in Mining Engineering. First of its kind in India, this course prepares the students with in-depth knowledge and hands on training in various aspects of the present and emerging fields of Safety Engineering and Disaster management.

In addition to the core courses on Safety Systems in Engineering, Rescue and Disaster Management, Legislation and Environmental Laws, this course provides opportunity to the students to acquire knowledge in emerging fields such as Human Factors Engineering, Geo-Technical Earthquake Engineering, Reliability and Quality Engineering, Application of Remote Sensing, GIS, GPS, Virtual Reality and Artificial Intelligence, Injury Epidemiology and Natural Hazards Mitigation.

The multi-disciplinary nature of the course enables the students to undertake their project work and vocation in various mining, oil and natural gas industries, and national and international organizations with which the Department is interacting through sponsored research and academic collaborations.

Note: The Institute may permit a limited number of students from this branch to opt for M.Tech Dual Degree in Petroleum Engineering. For details please see the sub-heading titled as NEW INTERDISCIPLINARY DUAL PETROLEUM ENGINEERING PROGRAM at the end of this section.

5251: OCEAN ENGINEERING AND NAVAL ARCHITECTURE

Ocean Engineering in its broadest sense is concerned with all engineering systems operated in the ocean environment. This includes systems for exploration and exploitation of the vast oceanic resources such as offshore oil and gas, seabed minerals, renewable energy, biological resources like marine and sea food, etc. Ocean Engineering also involves systems that utilize the ocean for transportation and recreational purpose such as ships and marine crafts, submarine and underwater remotely operated vehicles, recreational crafts, floating resorts, etc. Yet another important component of Ocean Engineering is related to protection of coastlines, simulation of marine hazards and its mitigation through engineering solutions. In short, any system that uses the ocean space and operates in the marine environment falls under the purview of an Ocean Engineer. Naval Architecture which is a specialized and important branch of Ocean Engineering deals primarily with design aspects of ocean transportation systems such as ships. Due to its historic importance, Naval Architecture stands out as a separate entity, and a Naval Architect is primarily engaged in the process of ship design in the widest sense of the word 'design'. Ocean Engineering and Naval Architecture encompasses subjects such as marine hydrodynamics, water wave mechanics, design of marine structures, structural mechanics related to marine structures, marine construction and welding, coastal engineering, physical & dynamical oceanography, port & harbor engineering etc.

In the five years of this dual degree M.Tech. course, the students can specialize in any of the broad areas of Ocean Engineering and Naval Architecture such as marine and ocean hydrodynamics, marine structures, design and construction of marine vehicles, coastal engineering, ocean environment etc. through project and specialized courses. The prolonged period of project work provides an opportunity to the student to gain expertise in one of these broad areas.

Employment opportunities of Ocean Engineers and Naval Architects exist in various offshore industry, shipbuilding and ship repairing yards, marine classification societies and other government regulatory bodies dealing with marine systems, Navy and Coast Guard, Coastal Engineering companies, Naval Defense R&D, environmental protection agencies for coastal protection, etc. Being multidisciplinary in nature, students from this program generally receive a broad engineering background, and this helps finding employment in other allied engineering fields as well including management and IT industry.

EMPLOYABILITY OF THE STUDENTS

The education and training imparted to the students on analytical tools and techniques with business applications make us one of the sought-after disciplines during placement season with most of our students getting placed within first two weeks of opening. A broad range of companies employ our students that includes core manufacturing, financial services and insurance, consulting services, software services, e-commerce, supply chain and logistics. Besides core companies such as Tata Steel and Coal India, our other recruiters include American Express, Amazon, Flip cart, Robert Bosch, Cap Gemini and Deloitte to mention a few. With increase in the requirement for data analytics and data science, our discipline is the destination for the companies across every discipline. With recent boost from Government of India many of our students are getting self-employed with their own start-up.

SCOPE FOR HIGHER EDUCATION

Every year, many of our students opt for going to highly reputed universities across the world to pursue Masters and Doctoral program. Georgia Tech, Purdue, and Columbia are some of the universities worth mentioning. Besides this, with a background of tools and techniques on applications to operations management, our students have an edge over the others in management schools. Many students opt to change over to Dual Degree programs in various disciplines such as financial engineering, entrepreneurship and specialize. Like any other discipline, we also take the students with very high CGPA directly pursue their PhD in this department. The scholarship associated with this program is at par with the entry level salary of many reputed companies.

FOUR-YEAR BS COURSES

Department of Geology and Geophysics

The Earth System is continuously evolving through a series of complex dynamic processes. Understanding and modeling these processes is a challenging, but also intrinsically exciting task. These complex processes interact with each other leading to the development of oceans, mountain belts, plateaus, flood plains, deserts and various picturesque landscapes; more importantly, they also result in local scale enrichment of various metallic, non-metallic, water and fuel resources that form the backbone of human civilization. On the flip side, catastrophic events like earthquakes, volcanic eruptions and landslides represent sinister manifestations of these very processes. Geology and Geophysics, the two sub-disciplines of Earth Science, have the common goals of understanding the origin of Earth vis-a-vis the solar system, of quantifying the Earth's evolutionary processes, searching for Earth Resources and predicting and mitigating natural and anthropogenic disasters and hazards. Geology primarily involves the unravelling of the physics and chemistry of Earth processes through direct sampling of earth materials like rocks, ores, soils, water and vegetation in the field, and the development of sophisticated laboratory methods and tools for interpretation of the collected field data. The primary objective of Geophysics is to probe the inaccessible depths of the Earth for understanding its 'anatomy' on the basis of bulk physical (electrical, magnetic, electromagnetic, gravitational, elastic and visco-elastic) properties and phenomena, such as electrical, magnetic, electromagnetic and gravitational properties, and propagation of elastic waves through its interior. Inevitably, Geophysics requires sophisticated instrumentation and rigorous mathematical tools. The Department of Geology and Geophysics of IIT Kharagpur offers 4 year B.S. programs in both the disciplines, imparting training on applied aspects of Earth Science.

4209: APPLIED GEOLOGY

Core courses in Applied Geology enable students to develop expertise in the study of minerals, rocks, ores and fossils. Students are imparted laboratory and field training under this program. Apart from disseminating information, emphasis is given to acquisition of basic tools for quantification of earth processes. Modern courses on geochemical thermodynamics, crust-mantle interaction, rock deformation, mountain building processes, global climate change, basin analysis, low-temperature Geochemistry, water-rock interaction, Isotope Geology and mineralogical spectroscopy have been formulated to expose students to frontier areas of

research. These fundamental courses serve as the bases for a number of applied courses, such as Engineering Geology and Groundwater Geology, which combine theory with stimulating laboratory components. Rigorous training on techniques and tools for exploration of earth resources is also imparted through exposure to courses such as on Remote Sensing & GIS, Environmental Geology and Micropaleontology, that have immediate industrial and environmental importance. Teaching in Applied Geology is supported by excellent computational and laboratory facilities. The curricula of B.S. in Applied Geology provide the opportunity of specializing in the field of interest by choosing appropriate courses in the fourth and final years. Students have the opportunity to get acquainted with modern research methodologies while working for their dissertation during the last two semesters. Exposure to industry and R&D activities are provided through the summer internship training. Students graduating with Applied Geology degrees get excellent job opportunity in Cement, Oil and Natural Gas, Mining and Construction companies, and in various Research Laboratories. Our graduates also excel in higher studies, with many being well placed in R&D sectors and Universities in India and abroad (e.g. US, UK and other developed countries).

Note: The Institute may permit a limited number of students from this branch to opt for a M.Tech Dual Degree in Petroleum Engineering. For details, please see the sub-heading titled as INTERDISCIPLINARY DUAL PETROLEUM ENGINEERING PROGRAM at the end of this section

*** "Those who would like to earn an MS degree would be given an option to do so at the end of 5th Semester of the 4-yr BS programme."

4201: CHEMISTRY

This programme prepares the students for a future career in chemical sciences in academia/industry by providing them with an in-depth education and practice in chemistry in addition to the appropriate exposure in mathematics, physics, biosciences, computers and engineering sciences. The curriculum for the first year spanning two semesters is common to all the students irrespective of their branches of study. In this programme the students are exposed to the frontline research topics in interdisciplinary areas, which include materials science, environmental science, biochemistry, and biological chemistry, in addition to the fundamental and basic courses. The curriculum, through course work and appropriate exposure to chemical research, helps to nurture original and imaginative thinking and provides opportunities for careers of an interdisciplinary nature. Opportunities for our students exists in industries manufacturing textiles, petroleum products, rubber and rubber like materials, plastics, agricultural products, papers, pharmaceutical, food, fertilizers, paints and even in cosmetic and other aromatic product manufacturing industries. After PhD the students can enter the R&D laboratories of the above mentioned industry houses. All industries manufacturing chemicals employ professionals with a background in chemistry. A large number of the alumni of the department are placed in highly reputed academic institutions and modern industry houses all over the globe. Some of the alumni are also successful entrepreneurs.

*** "Those who would like to earn an MS degree would be given an option to do so at the end of 5th Semester of the 4-yr BS programme."

4202: ECONOMICS

IIT Kharagpur offers an excellent opportunity for exceptionally bright students to get admitted to a four-year BS program in Economics, a unique program in the IIT system. The students desirous

of pursuing higher studies can subsequently opt for MS in Economics with an extra year of studies to receive the BS plus MS* degree. This holistic program is being offered by the Department of Humanities and Social Sciences, which has a multidisciplinary character, with the involvement of sister Departments like Mathematics, Industrial and Systems Engineering, Computer Science and Engineering, Rajiv Gandhi School of Intellectual Property Law, Vinod Gupta School of Management, and Rajendra Mishra School of Engineering Entrepreneurship. The common program in the first two semesters would make the students develop verbal and quantitative abilities with a rigorous scientific approach. After that, students get a thorough and intense exposure to economic theory, analytical tools, mathematical models, and applied econometric and data analytic techniques with adequate emphasis on understanding the interpretations of the results along with their socioeconomic implications. The curriculum gives particular emphasis on quantitative techniques and their applications in the areas of business analysis, finance, banking, and public policy. Lab practices, projects, industrial training, and seminars supplement the theory classes. The courses would succeed in establishing a synergy between technology and economics to understand real-world situations more accurately and intensely.

Through a suitable choice of professional electives, students can specialize in quantitative and financial economics with provisions for super specialization in certain chosen fields under the streams. At the same time, ambitious and hardworking students can earn a Minor in areas like Mathematics and Computing, Industrial and Systems Engineering, etc., and Micro-Specializations in diverse areas. In the increasingly globalized world, the new breed of economists specially trained for problem-solving will be in high demand in industry, institutions of higher learning, and research, both at home and abroad.

" * " Those who would like to earn an MS degree would be allowed to do so at the end of the 5th Semester of the 4-yr BS program."

4210: EXPLORATION GEOPHYSICS

Geophysics is a branch of Earth Science that deals with the delineation of the Earth's subsurface structure. The primary objective of Geophysics is to explore the inaccessible interior of the Earth, for understanding its anatomy on the basis of bulk physical properties (e.g. density, magnetic susceptibility, elastic, visco-elastic, electrical conductivity, natural radioactive radiation etc.). Propagation of elastic waves through the Earth's interior enables geophysicists to visualize the Earth from the surface to its center. Various geophysical methods are based on fundamental physical principles such as Newton's law of gravitation, Coulomb's law of forces between magnetic poles, Snell's law, Ohm's law and natural disintegration (α , β , γ radiation) of radioactive substances. Geophysicists perform different experiments in the field, and extract different physical properties of the underlying rocks related to exploration for oil and gas, minerals, groundwater, subsurface pollution etc. All these require sophisticated instrumentation, rigorous application of mathematical techniques and knowledge of state-of-the-art computer programming and applications.

The Department of Geology and Geophysics offers a 4-year B.S. Program in Exploration Geophysics, with an optional 1-year M.S. course. This program covers fundamental courses on Solid Earth Geophysics, Geophysical field theory and various exploration techniques with special emphasis on mathematical and computational tools. Gravity, Magnetic, Seismic, Electrical, Electromagnetic, Well logging and Radiometric methods of exploration are covered in detail. Earthquake Seismology, Seismic Tomography, Geophysical Signal Processing, Geophysical inversion/optimization are integral parts of the program. Students of Exploration Geophysics

undergo rigorous field training that involves use of various equipment for acquisition of data in the field. State-of-the-art equipment in

Geophysics include 48-channel Reflection, Refraction and Engineering seismograph, Broad Band Seismograph, Strong Motion Accelerograph, Gravimeter, Magnetometer, Resistivity meter, VLF, VLFR and magnetotelluric EM equipments and Radiation measurement equipment. A global Seismological Observatory has also been commissioned in the department.

Apart from the fundamental courses on Geophysics, Exploration Geophysics students also undergo in-depth training in relevant geological subjects that ultimately makes them complete Geophysicists. Curricula are very flexible, and students can choose to study advanced mathematics, electronics, computers and management courses as breadth subjects. Students get an opportunity to be acquainted with modern research methodologies while working for their dissertations during the last two semesters. Exposure to industries and R&D activities are provided through summer training.

Graduates get job opportunities in both Government and Private organizations in the Oil and Natural Gas, and Mining sectors, and Research Laboratories. Our graduates excel in higher studies abroad, and most of them are well placed in R&D sectors and Universities in the US, UK and other developed countries

Note: The Institute may permit a limited number of students from this branch to opt for M.Tech Dual Degree in Petroleum Engineering. For details, please see the sub-heading titled as NEW INTERDISCIPLINARY DUAL PETROLEUM ENGINEERING PROGRAM at the end of this section.

*** "Those who would like to earn an MS degree would be given an option to do so at the end of 5th Semester of the 4-yr BS programme."

4208: Mathematics and Computing

The BS-MS course in Mathematics and Computing is designed to provide strong foundation in both Mathematics and Theoretical Computer Science. It gives exposure to basic courses such as Real Analysis, Functional Analysis, Complex Analysis, Topology, Numerical Analysis, Partial Differential Equations, Database Systems, Algorithms, Optimization and Stochastic Process. It also provides several advanced courses like Artificial Intelligence, Computer Networks, Parallel Algorithms, Big data analysis, Statistical Reliability, Computational Fluid Mechanics, Cryptography, Finite Elements Method and Optimization Methods in Finance. Some of the subjects are supported by computer labs.

Students on completing this course are offered lucrative placements in superlative finance/ business/ software companies as design/ development engineers/research consultants. Several students also get scholarships abroad to pursue M.S./Ph.D in frontline areas of Mathematics, Statistics and Computer Science and are able to build their career in academia and R&D sectors.

*** "Those who would like to earn an MS degree would be given an option to do so at the end of 5th Semester of the 4-yr BS programme."

4204: PHYSICS

This course is designed to produce students capable of pursuing advanced studies in theoretical and experimental physics as well as handling problems related to applications of physics in engineering, technology, industry and medicine. This is achieved by making use of a well-balanced course structure consisting of undergraduate core courses in basic sciences, engineering sciences, technical arts, and workshop practice. The first year of this programme has a common curriculum followed in the institute where students are required to study courses in computer science, electrical, electronics and mechanical engineering, humanities and social sciences, etc. The second and third year are devoted for building up the basic formalisms in Physics with mainly core courses in theory and experiments with few electives. The fourth year mainly consist of elective courses and compulsory projects related to current problems in experimental and theoretical physics with a few core components for theory and development of laboratory skills.

*** "Those who would like to earn an MS degree would be given an option to do so at the end of 5th Semester of the 4-yr BS programme."

INTERDISPLINARY DUAL PETROLEUM ENGINEERING PROGRAM

Candidates opting for the courses: 4107, 4125, 4130, 5210, 5239, 5247, 5248, 5501, 5505 have the opportunity to pursue M.Tech Dual Degree in PETROLEUM ENGINEERING alongwith the B.Tech/B.S. degree in parent department.

India is the 4th largest consumer and importer of oil and natural gas yet has a significant shortfall in domestic production. Acute shortfall of manpower/quality expertise in new and advanced areas of Exploration & Production (E&P) is predicted for years to come. The program is aimed at developing technical and transdisciplinary competencies needed by engineers and scientists to hit the road running and succeed in the oil and gas industry. The Dual Degree program will have two verticals. (1) Petroleum Production (PP) vertical: 5-Year Integrated B. Tech. (Chemical/Mechanical/ Mining Engineering) - M. Tech. (Petroleum Engineering) (2) Petroleum Exploration (PE) vertical: 6-Year Integrated M.S. (Geology/Geophysics) - M.Tech. (Petroleum Engineering). A student opting for dual degree programme will be allocated one of the verticals based on his/her background (B.Tech./M.S.) choice and cumulative grade point average at the end of first year.

In addition to core courses in Chemical /Mechanical / Mining / Geosciences / Petroleum engineering and transdisciplinary courses from Humanities, Law and Management schools, the curriculum will include customized courses jointly offered by engineers and scientists from the industry and faculty members from IIT and renowned petroleum schools abroad during summer winter schools. The program will have industry-immersive internship starting at the early years and will build up in to a project experience and master's theses that are relevant to the sponsoring company. The uniqueness of the program will be to offer the flexibility to students to opt for depth courses either relevant to oil industry or in transdisciplinary areas so that it generates future leaders in industry, research, finance or public policy in the energy sector

Rules For Change Branch

The Institute may permit a student of B.Tech. or B.S. Course (except for B.Arch. students) to change from one branch of studies to another after the first academic year (first two semesters). Only those students will be eligible for consideration for a change of branch who has completed

all credit courses in the first two semesters in their first attempt and obtained a Cumulative Grade Point Average (CGPA) of not lower than 8.5 at the end of second semester. Change of branch shall be permitted strictly on the basis of inter-se-merit of the applicants. If there is any tie, it will be resolved by considering the JEE rank of the applicants.

1. In making the change of branch, those applicants, who have secured a rank within the top one percent, shall be allowed to change the branch to their choice without any constraint.
2. The remaining eligible applicants shall be allowed a change of branch strictly in order of their inter-se merit, subject to fulfillment of the constraints given below.

The actual number of students in the third (autumn) semester in the branch, to which the transfer is to be made, should not exceed 110% of the number of students on roll in that branch in the previous semester.

3. The applicants registered for a Dual Degree Programme will be considered for change of branch to another Dual Degree Programme only.
4. All changes of branch made in accordance with the above rules will be effective from third (Autumn) semester.

Additional Features

Grading System

The Institute follows a ten point grading system with letter grades (Ex, A, B, C, D and P) corresponding grade points (10 to 5) per credit. The Cumulative Grade Point Average (CGPA) is computed at the end of each semester. The CGPA secured by a student reflects his/her cumulative performance.

Flexible curricula

IIT Kharagpur has switched over to a more flexible academic system aiming at capability-based learning where students would get wider options to exercise and brighter students would be able to achieve more. Over and above receiving a B.Tech.(Hons.)Degree, a B.Arch. (Hons.) Degree, a Dual Degree or a B.S. Degree, for which he/ she has registered, a student depending on his/her performance and availability would have the option to earn additional credits across disciplines. On accumulation of sufficient prescribed credits, a student would be able to earn a MINOR in a discipline other than the degree for which he/she has registered. For example, a student in Electrical Engineering (EE), say, would obtain a B.Tech. (Hons.) degree in EE and can earn a MINOR in Computer Science and Engineering (CSE) or Mechanical Engineering (ME), or even a MINOR in a science / finance discipline. Provisions have been kept in the curricula so that a student has the freedom to pursue and sustain multidisciplinary interest. The Institute follows a ten point grading system with letter grades (Ex, A, B, C, D and P) corresponding grade points (10 to 5) per credit. The Cumulative Grade Point Average (CGPA) is computed at the end of each semester. The CGPA secured by a student reflects his/her cumulative performance.

Switchover to Interdisciplinary Programs

At the end of the First Year students can avail the option of switching over to any of the three Interdisciplinary programs in Financial Engineering, Engineering Entrepreneurship or Petroleum Engineering. Petroleum Engineering is available only for Mechanical, Chemical, Mining and Geology disciplines.

Micro Specializations

In order to provide opportunity for a larger section of our highly talented students to take up niche specializations from other/interdisciplinary programmes, IIT Kharagpur has initiated the concept of Micro-Specializations which are offered by departments, centres, schools including those who do not run undergraduate programmes.

Switchover from B.Tech (Hons.) to Dual Degree Program

A student in a regular B.Tech(Hons.) Program can switch over to the Dual Degree Program at the end of 3rd year.

Semester Away Program and Credit Transfer

The Institute has recently launched a Semester Away Program that enables students to spend one/two semester(s) of study in a University in India or Abroad. The credits acquired are transferred and accounted for the requirement towards the degree completion.

Faculty

The three main areas in which faculty members contribute to Indian Institute of Technology, Kharagpur are Teaching, Research and Service. As a core activity (along with research), teaching involves delivery of courses and activities such as evaluation as part of the Institute's academic programmes.

The Institute has an active Continuing Education Programme (CEP) which co-ordinates the 'Quality Improvement Programme', a programme of the Government of India to upgrade the skills of practicing teachers of engineering colleges in the country. Faculty members also offer courses to Industry in specific areas of their expertise, through the CEP cell.

A well equipped Sponsored Research & Industrial Consultancy (SRIC), a special R&D Cell to act as an interface between funding agencies and the Institute to handle sponsored research projects and industrial consultancy assignments enables faculty to engage themselves in consultancy and sponsored projects with an aim to enhance the Academy-Industry interface. Considering the escalating costs to upgrade the state-of-the-art R&D activities IIT Kharagpur has laid strong emphasis towards generation of resources and active collaboration with national / international industries and R&D organisations.

Faculty members also participate in the management of the Institute by being members of various administrative committees and outreach programmes for industry and educational institutes.

Facilities

Health care

The B. C. Roy Technology Hospital is located at the center of the Campus. It provides indoor and outdoor medical facilities for common ailments. However, a few specialized visiting medical practitioners regularly attend the outdoor chambers. The Hospital has its round the clock emergency medical attendance arrangement, and a 24x7 medicine counter. Complicated cases are referred for treatment to the State Hospital or to the Railway Hospital or to Hospitals in Kolkata. The Institute has Students' Medical Insurance Coverage which is obligatory on the part of the students and which usually covers a part of medical expenses for such referred cases. 24 hours Institute ambulance service is also available for the purpose of shifting the patients to other hospitals for better management. A few specialized medical practitioners are also available around the IIT campus for private consultation; this list of neighbourhood medical facilities is posted at <http://noticeboard.iitkgp.ernet.in/hospi.htm>

Counselling Centre

The Counselling Centre offers a broad range of services including psychological assessment, individual therapy, group therapy, and management to promote mental health, life skills training, emotional resilience and overall wellbeing of the student community. Full-time clinical psychologists and a visiting psychiatrist are available for consultation.

Student Life at Institute

The institute is fully residential. Students are accommodated in 22 Halls of Residence, 16 for boys and 6 for girls and one for Research Scholars with family. A boys' hostel with 2000 capacity is fully operational now. A new boys hostel with 1600 capacity and a new girls hostel with 800 capacity are operational. Research personnel working in sponsored and projects are accommodated in a Residential Complex. Two multistoreyed housing are under construction for project employees and Post Doctoral Fellows. The halls have 24 hours internet connectivity. All the Halls of Residence have regular catering facilities. Some additional food outlets are located within the campus; a few late evening canteens are available as well in some of the halls of residence. Several restaurants including air-conditioned ones and a Cafe Coffee Day unit are located in the campus, particularly in the hostel area. Outlet of Subway is operational at Nalanda Complex inside the campus. For daily necessities and groceries, one can walk down to the Tech Market within the campus. A larger market, Gole Bazaar, is about 5 km from the Campus. Three banks with ATM facility are located inside the Campus. The State Bank of India branch with core banking services is in the campus close to the Institute Main building and it provides foreign exchange facilities as well. An extension counter of Syndicate Bank is situated on the first floor of the Institute main building. A branch of Punjab National Bank is situated in the Tech Market. In addition, an Axis Bank ATM is available as well inside the Gymkhana premises. The Post Office is located close to the State Bank branch. Outlets of a few courier services are also available within the campus. South Eastern Railway has been operating a counter in the Institute Main Building area extending Railway ticket booking facilities especially to the students and the campus residents. There are also a few privately run outlets in the campus to cater facilities for railway ticket booking, air ticket booking, car rental, and STD/ISD phone calls.

Financial Assistance

The Institute also offers a very large number of scholarships, medals and prizes which is made possible by the munificence of its well-wishers, providing due recognition and reward for merit. The Institute awards merit-cum-means scholarship to all eligible students of 4-year B. Tech (H), 5-year Dual Degree, 5-year B. Arch., 4-year B.S. courses subject to a maximum number of 25% of the total number of registered students of that sessions. Apart from this, various endowment scholarships are also available. The sponsored research and consultancy projects generate significant amount of fund and provide generous support for undergraduate students doing good projects. Financial assistance (i.e. Travelling Allowance, Registration Fee, Visa/Insurance charges, etc.) are extended to the students for presenting research paper in National/International Conferences held in India/Abroad.

Training & Placement

Career Development Center

IIT Kharagpur has revamped its Training and Placement (T&P) section to Career Development Center (CDC) which provides 360 degree career solutions to the students. CDC, through its various activities, envisions to 'Create Game Changer IIT Kgpians'. CDC has been established with the mission to 'Make every individual IITian a Career Oriented person instead of a Job Oriented Person.'. CDC views all the recruiters as its partners to develop careers of students of IIT. It is continuously engaged in building relationships with corporate sectors and build career of IIT students.

Several corporate houses have also shown interest in joining this new career orientation program of IIT-Kharagpur. CDC develops professional ethics among students. It facilitates students to decide and pursue their careers in various sectors, which include core engineering, IT, Financial, Banking, Analytics, Consulting jobs, research and development, academic institutions etc. A new initiative of CDC has been to institutionalize the international internship program through which students of IIT Kharagpur would get opportunities for international internship facilitated by the alumni of the institute. Students right from day one can be guided in making a conscious career choice. These various activities of CDC serve as motivation for IIT aspirants who on admission to IIT Kharagpur can avail the unique services offered by the CDC.

Various activities of CDC can be primarily categorized into three functions:

1. Personality and Career Development Programme:

- Improve soft skills, professional communication and personality through career counselling by professional agencies/experts
- Help prepare professional resume through conducting resume writing workshops.
- Assist the departments in organizing Industry oriented workshops, leadership talks, lectures, competitions, Curriculum Oriented Career Prospects (COCOP)Workshops including niche areas.

2. Internships and placements:

- Conduct the internship and placement – both national and international
- Conduct in-house Employability Test (ET)
- Publish information in portal/ hard copies and Communicate

3. Corporate Relations:

- Facilitating meetings between visiting corporate houses and Sponsored Research and

Industrial Consultancy Cell and Departments.

- Collecting corporate feedback on what they are looking for in students for different types of jobs.
- Development of further interaction pattern.
- Arranging interaction sessions between corporate leaders and students (Guest lecturers/ talks/ seminars)
- Alumni – Mentoring, Recruitment, Further networking (Through alumni cell, Dean AA&IR)
- Collecting Course content feedback from the industries

Industry And Alumni Relations

Alumni of IIT Kharagpur are considered to be the most prominent face of the Institute who have become our global brand ambassador. Their success across various domain has brought the Institute international recognition.

To cater to these esteemed alumni, IIT Kharagpur has instituted the Office of Alumni Affairs and International Relations (AA&IR) headed by a Dean with assistant by an Associate Dean. The office is the nodal point for all official communication, events and other activities on behalf of the Dean, Alumni Affairs & International Relations. It is located in IIT Kharagpur Campus. The Office organizes the Annual Alumni Meet, Distinguished Alumni and Service Awards (during Convocation) and other alumni related events. The office has currently launched a program called Institutional Development for the overall development and improved global ranking of the Institute.

The Office also publishes several newsletters throughout the year. The AA& IR Office strives to excel in alumni relations and networking and create an effective platform for the alumni, faculty, students and of course the Institute. The office ensures free flow of information, news and updates, announcements and alumni networking through a dedicated website iitkgp.org

The Office has enabled the alumni to collaborate with the Institute to set up new Schools and Centres, international programmes, students' financial assistance. More activities are in the pipeline.

Recreational/Extra Curricular activities

IIT Kharagpur aims at the all round development of personality, with emphasis on physical, socio-cultural and value-oriented education. In the rich tapestry of culture that marks this IIT, students play a vital role. They participate in almost all decision-making bodies of the Institute, starting from hostel administration to Senate, and organize cultural and techno-management activities throughout the year, culminating in the Spring Fest and Kshitij. Technology Students' Gymkhana, along with the newly expanded Students' Activity Centre is the nerve centre for sports, cultural and social activities and puts a premium on creativity and teamwork. It has a number of outdoor and indoor stadia for sports and games, a modern swimming pool and a gymnasium. Photography Club, Fine Arts Club, Publicity Club, Music Club, Yoga Club, Film Society, Dramatics Society, Aquatics Society, Astronomy Club and many more special interest groups are supported by the Gymkhana. The students are also participating Inter-IIT Sports Meet held every year in one IIT in rotation. Lately a large number of technology and social service focused student societies have been formed, quite often the local chapter of an international

body. The halls of residence also offer a few in-house sports facilities in addition to the central facilities. The hall of residence also organizes Rangoli and Illumination during Diwali.

More details at: <http://www.iitkgp.ac.in>

Location and Accessibility

Situated 120 km west of Kolkata, Kharagpur can be reached in about two and a half hours by train from the Howrah railway station of Kolkata. Kharagpur is also connected by direct train service to other major cities of the country. The Institute is about 10 minute's drive (5 km) from Kharagpur railway station. Located in a sylvan landscape, far from the heat and dust of the city, the campus provides a calm and serene environment for dedicated academic pursuits. IIT Kharagpur has two fully operational extension centres, one at Calcutta and the other at Bhubaneswar, besides the main campus at Kharagpur, which is the largest in the country.

Indian Institute of Technology Kharagpur (IIT Kharagpur) is a public institute of technology research university established by the Government of India in **Kharagpur, West Bengal**, India. Established in 1951, the institute is the first of the **IITs** to be established and is recognised as an **Institute of National Importance**. In 2019 it was awarded the status of Institute of Eminence by the Government of India.^[4] IIT Kharagpur is ranked among the most prestigious academic institutions in India.^[5]

The institute was initially established to train engineers after India attained independence in 1947. However, over the years, the institute's academic capabilities diversified with offerings in management, law, architecture, humanities, etc. IIT Kharagpur has an 8.7-square-kilometre (2,100-acre) campus and has about 22,000 residents.

History[edit]

Foundation[edit]

In 1946, a committee by Sir **Jogendra Singh**, Member of Viceroy's executive council, to consider the creation of higher technical institutions "for post-World War II industrial development of India". This was followed by the creation of a 22-member committee headed by **Nalini Ranjan Sarkar**. In its interim report, the Sarkar Committee recommended the establishment of higher technical institutions in India, along the lines of the **Massachusetts Institute of Technology** and consulting from the **University of Illinois at Urbana–Champaign** along with affiliated secondary institutions. The report urged that work should start with the speedy establishment of major institutions in the four-quarters of the country with the ones in the east and the west to be set up immediately.^[6]



IIT Kharagpur Main Entrance



IIT Kharagpur – Main Entrance Gate (Puri Gate)

On the grounds that [West Bengal](#) had the highest concentration of industries at the time, [Bidhan Chandra Roy](#), the Chief Minister of West Bengal, persuaded [Jawaharlal Nehru](#) ([India's first prime minister](#)) to establish the first institute in West Bengal. The first Indian Institute of Technology was thus established in May 1950 as the Eastern Higher Technical Institute.^[7] It was located in [Esplanade East, Calcutta](#), and in September 1950 shifted to its permanent campus at [Hijli, Kharagpur](#) 120 kilometres (75 mi) south-west of Kolkata (formerly called Calcutta). [Hijli](#) had been used as a [detention camp](#) during the period of [British rule in India](#), where [Indian independence activists](#) were imprisoned.^[8]

IIT Kharagpur is the 4th oldest technical institute in the West Bengal state after [IIEST, Shibpur](#) (established as B.E. College in 1856), [Jadavpur University](#) (established as Bengal technical institute in 1906) and [Rajabazar Science College](#) (established as [Calcutta University](#) campus for Science and Technology in 1914). When the first session started in August 1951, there were 224 students and 42 teachers in the ten departments of the institute. The classrooms, laboratories and the administrative office were housed in the historic building of the Hijli Detention Camp (now known as Shaheed Bhawan), where political revolutionaries were imprisoned during the period of British colonial rule.^[9] The office building had served as the headquarters of the Bomber Command of the [U.S. 20th Air Force](#) during World War II.



IIT Kharagpur main building

Early developments [edit]



The [Hijli Detention Camp](#) (photographed in 1951) served as IIT Kharagpur's first academic building

The name "Indian Institute of Technology" was adopted before the formal inauguration of the institute on 18 August 1951 by [Maulana Abul Kalam Azad](#).^[10] On 18 May 1956 a Bill (Bill no 36 of 1956)^[11] was introduced in Lok Sabha to declare the institution known as the Indian Institute of Technology, Kharagpur to be an institution of national importance and to provide for its incorporation and matters connected therewith. The motto of the institute, योगः कर्मसु कौशलम् is taken from the Bhagavad Gita, Chapter 2, Verse 50 and it has been translated by Sri Aurobindo as "Yoga is skill in works". On 15 September 1956, Indian Institute of Technology (Kharagpur) Act, 1956 of Parliament received the assent of the President.^[12] Prime Minister Nehru, in the first convocation address of IIT Kharagpur said:^[13]

Here in the place of that Hijli Detention Camp stands the fine monument of India, representing India's urges, India's future in the making. This picture seems to me symbolical of the changes that are coming to India.



The main building of the institute during construction (1955)

The Shaheed Bhawan was converted to a museum in 1990.^[14]



Nalanda Complex, 2018

The Srinivasa Ramanujan Complex was incorporated as another academic complex of the institute with [Takshashila](#) starting operation in 2002, [Vikramshila](#) in 2003 and [Nalanda](#) in 2012. Earlier the Hijli Detention camp building, now named as Hijli Saheed Bhavan, where the Nehru Museum of Science & Technology is located is an imposing building, bearing resemblance to the Byzantine style of architecture.



Nehru Museum

Campus^[edit]

IIT Kharagpur is located 120 kilometres (75 mi) west of [Kolkata](#). The campus is located five kilometres away from [Kharagpur Railway Station](#) in [West Midnapore](#) district. The layout of the present campus and the design of the buildings were carried out by a group of engineers and architects under the guidance of [Werner M. Moser](#), a Swiss architect.^[15] The 8.5-square-kilometre (2,100-acre)^[16] campus is residence to about 22,000 inhabitants.^[17] In 2015, IIT Kharagpur had about 605 faculty members, 1,933 employees and approximately 10,010 students living on the campus.^[18] The campus has a total of 55 kilometres (34 miles) of roadways. The Institute plans to go Green by 2020.^[19]

The 22 student hostels are located on either side of Scholars Avenue, which extends from the institute gate to the B. C. Roy Technology Hospital. The three earliest halls—Patel, Azad, and

Nehru—together constitute the PAN loop or Old Campus, which is located just next to Scholar's Avenue. There are ten hostels for undergraduate male students (MMM, LBS, RP, RK, MS, LLR, HJB, Patel, Azad and Nehru) and two for undergraduate female students (SN/IG and MT). There are a few post-graduate students' hostels including four for women(RLB, Gokhle, Nivedita and SAM) and hostels for research scholars (BCR, VS, BRH and JCB) and a separate hostel for scholars from the armed forces.^[15] The Jnan Ghosh stadium and Tata Sports Complex host large-scale sports competitions. The *Tagore Open Air Theatre* has a capacity of 6,000 people, and is used to host cultural programs.^[15] The Science and Technology Entrepreneurs' Park (STEP) provides infrastructure facilities to alumni who want to become entrepreneurs but lack infrastructure to start their own corporation.^[20]

In addition to the main campus at Kharagpur, the institute has an extension centre at Kolkata to provide venues for continuing education programmes, distance learning courses, and guesthouse accommodation. The institute has Kolkata extension centre at [Rajarhat](#) and uses it to offer some full-time undergraduate and postgraduate courses.^[21] The 4-hectare (10-acre) Rajarhat campus houses 2,500 students.^[22] The institute's plan for a similar branch campus of 0.81 square kilometres (200 acres) in [Bhubaneswar](#) was scrapped following rejection by the Union Human Resource and Development ministry.^[23]

The [Ministry of human resource development](#) on 5 September 2019 awarded "[Institute of Eminence](#)" status to IIT Kharagpur along with four public institution in India, which will enable to get full autonomy and special incentives.^{[24][25]}



Vikramshila, 2018



Takshashila, 2018

Academic buildings^[edit]

IIT Kharagpur has 19 academic departments, eight multi-disciplinary centres/schools, and 13 schools of excellence in addition to more than 25 central research and development units. Apart from the main building in the central academic complex, the *Srinivasa Ramanujan Complex* also has common academic facilities. In the S. R. Complex, the Takshashila building houses the G. S. Sanyal School of Telecommunication, the School of Information Technology and the Computer and Informatics Centre; and has facilities for conducting lecture classes as well. Vikramshila is another academic building in the S. R. Complex, having four lecture halls, several seminar rooms, and Kalidas Auditorium, which has a seating capacity of 850.^[26] The School of Medical Science and Technology is housed in the basement of the Vikramshila building.

The institute main building houses most of the administrative offices, the lecture halls, and two auditoriums on either side. The signage at the front displays the message, "Dedicated to the service of the nation." The tower of the main building has a steel tank with 10,000 imperial gallons of water capacity for emergency supply needs. The Netaji Auditorium in the main building is used for official functions and events, and doubles as a cinema theatre on weekend nights, showing films to the IIT community at subsidised rates.

IIT Kharagpur's first library was located in a small room of the institute's Old Building (*Shaheed Bhawan*). At the time of its opening in 1951, the library had a collection of 2,500 books. Now located in the main building of the institute, the Central Library is one of the largest of its type. Its collection includes over 350,000 books and documents, and it subscribes to more than 1,600 printed and online journals and conference proceedings.

The library has six halls and a section exclusively for **SC** and **ST** students. The library's collection consists of books, reports, conference proceedings, back volumes of periodicals, standards, theses, micro-forms, DVDs, CD-ROMs, and audio-visual material. The library's transaction service is automated and online searches are possible through an [Online Public Access Catalog](#) (OPAC). The Electronic Library section has a collection of databases, video lectures and miscellaneous other resources.

The [Nehru Museum of Science and Technology](#) has over a hundred indoor exhibits that include technical models collected from institutions across India. The park outside the museum contains 14 open-air demonstrations and outdoor exhibits, including a hunter plane and a steam engine. The museum has an archive room, showing documents relating to the history of the institute and [West Midnapore district](#).^[27] The Rural Museum, located in the Rural Development Centre of the institute, has a collection of exhibits in local culture.

Civic amenities[edit]

The institute campus has six guest houses, a civic hospital, four nationalised banks, four schools(Hijli High School; Kendriya Vidyalaya; D.A.V Model School; St. Agnes Branch School), a railway reservation counter and a police station. The campus has a water pumping station, electrical sub-station, telephone exchange, a market, six restaurants, and a garbage disposal section for the daily needs of the residents.^[14] Construction is going on for another guest house and a convention centre having a capacity of 2,000. The institute draws its supply of water from wells near the [Kosai river](#) (located 112 kilometres away from institute) by harnessing sub-surface water. Three deep wells near the institute supplement the supply from the river. The water is supplied by a 16-inch (410 mm) pipeline to 12 tanks in the campus with a total capacity of 2,800,000 litres (615,000 imperial gallons). However students in 2009 had shown dissatisfaction with the level of amenities, especially the civic hospital, forcing the director to resign.^[28]

IIT Kharagpur is located just outside the town of Kharagpur, in the Hijli village. The civic amenities provided to the campus of IIT Kharagpur make it nearly self-sufficient with regards to the basic needs of the residents. As Kharagpur is a small town, there is limited direct interaction between the campus community and the town. There is also little opportunity for the employment of family members of the faculty. Unlike some other IITs (such as [IIT Bombay](#)), IIT Kharagpur does not restrict outsiders' entry into the campus.^[29] IIT Kharagpur provides much of its benefits to the local community through the Rural Development Centre (RDC) located in the campus. Established in 1975, the RDC helps the local community by developing customised technologies.^[30] The RDC also co-ordinates the [National Service Scheme](#) (NSS) programs in IIT Kharagpur, with the members of NSS taking part in weekly community service activities such as sanitation, road construction, teaching and building educational models.

In 2005, IIT Kharagpur started construction of a boundary wall for the security of the campus, which is now complete. Mild restrictions apply to entry of outside vehicles. The boundary wall was opposed by the local community as it would hinder their access to amenities provided by the institute. Campus residents have also been denied direct access to the adjoining [Hijli railway station](#) as a result of this wall. The local community opposed the construction of a [flyover](#) from the railway station to the campus formerly, under the pretext that it would lead to substantial losses of opportunity for the shops along the roads. After the flyover construction had been completed and became operational, things ensued in a manner as the local community had anticipated, but the flyover has resulted in more convenience for transport.^[31] The construction of the 1,052.69 metres (3,453.7 ft) long flyover was approved by the [Indian Railways](#) and [West Bengal state government](#). It's called Hijli Road overbridge, and was constructed for estimated cost of ₹237 million (US\$3.0 million).^[32]

Halls of residence[\[edit\]](#)



Madan Mohan Malviya Hall accommodates both undergraduates and post-graduates



Rajendra Prasad Hall of Residence

IIT Kharagpur provides on-campus residential facilities to its students, research scholars, faculty members and many of its staff.^{[33][34]} The students live in hostels (referred to as *halls*) throughout their stay in the IIT.^[35] Hostel rooms are wired for internet, for which students pay a compulsory charge. Most of the rooms in the older halls of residences are designed to accommodate one student, but an increase in the number of incoming undergraduate students has led to shared rooms in the first two years. The new rooms of Lal Bahadur Shastri Hall and new blocks of few other hall of residence accommodate three students in one room. The oldest Halls of Residence are located in the PAN Loop, named after the Patel, Azad, and Nehru Halls.

The halls of IIT Kharagpur are:

- Ashutosh Mukherjee Hall
- Azad Hall^[36]
- Bidhan Chandra Roy Hall
- B R Ambedkar Hall
- Gokhale Hall
- Homi Jehangir Bhabha Hall
- Acharya Jagadish Chandra Bose Hall
- Lala Lajpat Rai Hall
- Lal Bahadur Shashtri Hall
- Madan Mohan Malviya Hall
- Meghnad Saha Hall
- Mother Teresa Hall
- Nehru Hall
- Patel Hall
- Radhakrishnan Hall
- Rajendra Prasad Hall
- Rani Laxmibai Hall
- SAM Hall
- Savitribai Phule Hall
- Sarojini Naidu / Indira Gandhi Hall
- Sister Nivedita Hall
- Vikram Sarabhai Residential complex
- Vikram Sarabhai Residential complex 2
- Vidyasagar Hall
- Zakir Hussain Hall

Undergraduate students choose between National Cadet Corps (NCC), National Service Scheme (NSS) and National Sports Organisation (NSO) or National Cultural Appreciation(NCA) for their first two years of study.^[37] IIT Kharagpur has common sports grounds for cricket, football, hockey, one court for volleyball, two for lawn tennis, four indoor badminton court, tracks for athletics; and swimming pools for aquatic events. Most of the hostels have their own sports grounds. The institute used to organise *Shaurya*, an annual inter-collegiate sports and games meet during October which was discontinued in 2012.^[38]

Organisation and administration^[edit]

Governance^[edit]

Main article: Indian Institutes of Technology § Organisational structure

IIT Kharagpur shares a common *Visitor* (a position held by the [president of India](#)) and the [IIT Council](#) with other IITs. The rest of IIT Kharagpur's organisational structure is distinct from that of the other IITs. The Board of Governors of IIT Kharagpur is under the IIT Council, and has 13 members that include representatives of the states of [West Bengal](#), [Bihar](#), [Jharkhand](#) and [Odisha](#), in addition to other members appointed by the IIT Council and the institute's [senate](#). Under the Board of Governors is the institute director, who serves as the chief academic and executive officer of the IIT. He is aided by the deputy director.^[39] Under the director and the deputy director are the [deans](#), heads of departments, registrar, president of the students' council, and chairman of the Hall Management Committee. The registrar is the chief administrative officer and oversees day-to-day operations. He is the custodian of records, funds, and other properties of the institute.^[39] Under the charge of the heads of departments (HOD) are the faculty (full-time professors as well as those of associate and assistant status). The wardens of hostels are placed under the chairman of the hall management committee in the organisation.^[40]

IIT Kharagpur receives comparatively more funding than other engineering colleges in India.^[41] While the total government funding to most other engineering colleges is around ₹100–200 million (\$2–4.5 million) per year, IIT Kharagpur gets nearly ₹1,300 million (US\$16 million) per year.^[42] Other sources of funds include student fees and research funding by industry-sponsored projects. IIT Kharagpur provide scholarships to all [MTech](#) students and research scholars to encourage them to pursue higher studies.^[citation needed] The cost borne by undergraduate students, including boarding and mess expenses, is around ₹275,000 (US\$3,400) per annum. 35% of undergraduate students are given additional financial support based on personal need and economic background, with their annual expenses being nearly ₹64,000 (US\$800).^[43]

The academic policies of IIT Kharagpur are decided by its senate.^[44] It consists of all professors of the institute, and administrative and student representatives. The senate controls and approves the curriculum, courses, examinations and results, and appoints committees to look into specific academic matters. The teaching, training and research activities of the institute are periodically reviewed by the senate to maintain educational standards.^[citation needed] The Director of IIT Kharagpur is the *ex officio* chairman of the Institute Senate.

Academic Units

[\[edit\]](#)

Faculty of Engineering and Architecture (FoE&A)			
Aerospace Engineering	Agricultural and Food Engineering	Architecture and Regional Planning	Centre for Computational and Data Sciences

Centre For Railway Research	Centre of Excellence in Advanced Manufacturing Technology	Centre of Excellence in Advanced Transportation	Centre of Excellence in Artificial Intelligence (AI)
Centre of Excellence in Precision Agriculture & Food Nutrition	Chemical Engineering	Civil Engineering	Computer Science and Engineering
DRDO Industry Academia - Centre of Excellence (DIA-CoE)	Electrical Engineering	Electronics and Electrical Communication Engg.	Energy Science and Engineering
Environmental Science and Engineering	G.S Sanyal School of Telecommunication	Mechanical Engineering	Metallurgical and Materials Engineering
Mining Engineering	Ocean Engg and Naval Architecture	Ranbir and Chitra Gupta School of Infrastructure Design and Mngt.	Rubber Technology
School of Water Resources	Steel Technology Centre	Subir Chowdhury School of Quality and Reliability	
Faculty of Bio-Technology and Bio-Sciences (BTBS)			
Bio Science	Biotechnology	Centre of Excellence in Affordable Healthcare	Dr B C Roy Multi Speciality Medical Research Centre

P.K. Sinha Centre for Bioenergy and Renewables	School of Medical Science and Technology		
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Faculty of Interdisciplinary Sciences & Engineering

Academy of Classical and Folk Arts	Advanced Technology Development Centre	Centre of Excellence for Indian Knowledge System	Centre of Excellence on Safety Engineering & Analytics (COE-SEA)
Cryogenic Engineering	Deysarkar Centre of Excellence in Petroleum Engineering	Industrial and Systems Engineering	Kalpana Chawla Space Technology Cell
Materials Science Centre	Nano Science and Technology	Partha Ghosh Academy of Leadership	Rajendra Mishra School of Engineering Entrepreneurship

Faculty of Sciences (FoS)

Centre for Ocean, River, Atmosphere and Land Sciences (CORAL)	Chemistry	Geology and Geophysics	Mathematics
Physics	School of Education		

Faculty of Humanities, Social & Economic Sciences

Centre for Rural Development and Innovative Sustainable Technology	Humanities and Social Sciences	Rekhi Centre of Excellence for the Science of Happiness	
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School of Law			
Rajiv Gandhi School of Intellectual Property Law			
School of Management			
Vinod Gupta School of Management			

Academics [edit]



Entrance gate of IIT Kharagpur

Admission to most undergraduate and postgraduate courses in IIT Kharagpur is granted through written entrance examinations. Admissions to M.S.(by Research) and PhD programmes are based on written tests followed by personal interviews.

Admission to undergraduate programmes in all IITs was tied to the [Indian Institute of Technology Joint Entrance Examination](#) (IIT-JEE). Since 2013 students have to pass JEE Advanced in order to be admitted to undergraduate courses at IITs. But before they can sit for JEE Advanced, they have to qualify JEE (Mains). Candidates who qualify for admission through IIT-JEE used to apply for admission in four-year BTech (*Bachelor of Technology*), five-year BArch degree, five-year Dual Degree (Integrated *Bachelor of Technology* and *Master of Technology*) and four year BS *Bachelor of Science* courses at IIT Kharagpur. The admissions to postgraduate programmes (MTech) are made primarily through the [Graduate Aptitude Test in Engineering](#) (GATE). Other postgraduate entrance exams include Joint Admission to MSc (JAM) for MSc, and Common Admission Test (CAT) conducted by IIMs for management studies.

15% of the seats are reserved for students belonging to [Scheduled Castes](#) (SC) and 7.5% for [Scheduled Tribes](#) (ST).^[45] As of 2008 As of 2008, 27% separate reservation exists for the [Other Backward Classes](#).

IIT Kharagpur is a member of [LAOTSE](#), a network of universities in Europe and Asia exchanging students and senior scholars.[\[citation needed\]](#)

Undergraduate education[\[edit\]](#)



A lecture auditorium in the Vikramshila complex

IIT Kharagpur offers degrees as part of its undergraduate programmes. They include [Bachelor of Technology](#) (BTech.Hons), [Bachelor of Architecture](#) (BArch) and the 5-year integrated [Master of Science](#). The BTech degree is the most common undergraduate degree in IIT Kharagpur in terms of student enrolment. It is based on a four-year programme with eight semesters. The first year of the BTech curriculum has common courses from various departments. At the end of the first year, an option to change departments is given to students on the basis of their performance in the first two semesters. [\[46\]](#) Like other IITs which evaluate their students on the basis of others' performance IIT Kharagpur also uses relative grading.

From the second year onwards, the students take courses offered by their departments that are known as *depth* courses. In addition to these, the students take inter-disciplinary courses known as *breadth* courses. Separate courses from the [humanities](#) and [social sciences](#) (HSS) department, and management and information technology are also required. At the end of the third year for the BTech and fourth year for the dual degree, students undertake industrial training for a minimum period of eight working weeks as part of the undergraduate curriculum. [\[47\]](#) In the final year of their studies, most of the students are offered jobs in industries and other organisations through the Training and Placement section of the institute commonly known as Career Development Centre or CDC. [\[48\]](#) Some students opt out of this facility in favour of higher studies or by applying to recruiting organisations directly. In addition to the [major degree](#) as part of the undergraduate education, students can take courses from other departments, and by demonstrating knowledge of a discipline based on objectives set by the department, earn a minor in that department. To stay up-to-date with the latest academic and industry standards, IIT Kharagpur revamps its academic curriculum periodically. In August 2017, an Undergraduate Council(UG Council) was constituted by the institute under the Dean of Undergraduate Studies(Dean UGS) as its chairman and with one student representative from each department to be elected/nominated for an annual term, to assist in the process of curriculum update, assimilate student feedback on different academic policies, and forward suggestions and proposals to the institute senate.

Postgraduate and doctoral education[\[edit\]](#)



Rajiv Gandhi School of Intellectual Property Law offers law programmes in Intellectual Property

IIT Kharagpur offers postgraduate programmes including Master of Technology (MTech), [Master of Business Administration](#) (MBA), and Master of Sciences (MSc). Some specialised post graduate programmes offered by IIT Kharagpur include Master of Human Resource Management (MHRM), Postgraduate Diploma in [Information Technology](#) (PGDIT), Master in Medical Science and Technology ([MMST](#)), Master of [City Planning](#) (MCP), LL.B in [Intellectual Property Law](#) (LL.B Honors in IP Law), and Postgraduate Diploma in Maritime Operation and Management (PGDMOM). The institute offers the Doctor of Philosophy degree (PhD) as part of its [doctoral education programme](#). The doctoral scholars are given a topic by the professor, or work on the consultancy projects sponsored by industry. The duration of the programme is usually unspecified and depends on the discipline. PhD scholars submit a [dissertation](#) as well as conduct an oral defence of their thesis. [Teaching assistantships](#) (TA) and [research assistantships](#) (RA) are provided based on the scholar's academic profile. IIT Kharagpur offers an M.S. (by research) programme; the MTech and M.S. being similar to the US universities' non-thesis (course-based) and thesis (research-based) master programmes respectively.



Vinod Gupta School of Management, the first school of management within the IIT system.

IIT Kharagpur (along with other IITs) offers Dual Degree programs that integrate undergraduate and postgraduate studies in selected pairs of branches and specialisations. Most of the Dual Degree programs involve specialisation in the major field of education of the student. For a dual degree involving an MBA from [Vinod Gupta School of Management](#), the selection is made on the basis of an aptitude test of students across all engineering streams. The Dual Degree program spans five years as against six years in conventional BTech (four years) followed by an MTech or MBA (two years).^[49]

IIT Kharagpur has a management school (Vinod Gupta School of Management), an entrepreneurship school ([Rajendra Mishra School of Engineering Entrepreneurship](#)) and a law school ([Rajiv Gandhi School of Intellectual Property Law](#)) on its premises. The Rajiv Gandhi School of Intellectual Property Law has been opened in collaboration with [George Washington University](#).^[50] Rajiv Gandhi School of Intellectual Property Law is the only law school in IIT

System of the country. The [School of Medical Science and Technology](#) at IIT Kharagpur is the first and also the "only" of its kind in the country where M.B.B.S. graduates are trained in art and science of medical research with aim to provide a platform for interdisciplinary teaching and research in the field of medical science and technology. IIT Kharagpur will invest around ₹2.3 billion (US\$29 million) for its 400-bed super speciality hospital in the campus which will impart undergraduate medical course to students. The institute is expected to start the course in 2017 which will be recognised by [Medical Council of India](#) (MCI).^[51]

IIT Kharagpur also offers a unique, tri-institute programme, Post Graduate Diploma in Business Analytics (PGDBA), in association with [IIM Calcutta](#) and [ISI Kolkata](#), which is ranked 14th globally as per QS World University Ranking 2019.^[52]

In 2021, IIT Kharagpur and The [University of Manchester](#) entered into strategic partnership and launched a dual award PhD programme.^[53]

Continuing education[edit]

The institute offers the Continuing Education Programme (CEP) for qualified engineers and scientists to learn technologies and developments in their academic disciplines. As part of CEP, the institute offers formal degree programmes (MTech and PhD) and an Early Faculty Induction Programme (EFIP)^[54] under the Quality Improvement Programme (QIP), short-term courses supported by the [All India Council for Technical Education](#), self-financed short-term courses supported by course fees, and certificate courses conducted as distance education. In addition to conducting educational courses, the CEP develops model curricula for engineering education. As of 2006, the CEP has facilitated publication of 103 course curriculum books. The CEP administers SIMAP (Small Industries Management Assistant Programme) and STUP (Skill-cum-Technology Upgradation Programme) on behalf of IIT Kharagpur; the institute being a corpus institute of [SIDBI](#) (Small Industries Development Bank of India).^[55]

Sponsored research[edit]



[Kalpana Chawla Space Technology Cell](#)

The institute received 171 research revenue worth ₹417 million (US\$5.2 million)—and 130 consultancy projects in the 2005–06 session. The institute transferred 15 technologies to industry during the same session. The institute has filed 125 patents and 25 of them have been granted. This does not include patents obtained by individual professors or students. During the same session, the value of the international projects was ₹9.9 million (US\$120,000), and the revenue

from transferred technologies was about ₹2.5 million (US\$31,000). The institute earned ₹520 million (US\$6.5 million) from research projects in the 2005–06 session.^[22] Major sponsors for research include the Indian Ordnance Factories,^[56] Indian National Science Academy, Ministry of Human Resource and Development, Defence Research and Development Organisation, Microsoft Corporation, Department of Science and Technology, Ministry of Communications and Information Technology (India) and Indian Space Research Organisation.^[57] IIT Kharagpur has had a cell known as the SRIC (Sponsored Research and Industrial Consultancy) cell since 1982. It handles sponsored research projects and industrial consultancy assignments, and has the infrastructure to simultaneously administer 600 R&D projects.^[58]

Indira Gandhi Centre for Atomic Research has entered into a collaboration with IIT Kharagpur to carry out research for the design and development of Fast Breeder Reactors (FBRs). This is a major development that will boost the second stage of India's nuclear power programme.^[59]

Grading system^[edit]

IIT Kharagpur follows the credit-based system of performance evaluation, with proportional weighting of courses based on their importance.^[46] The total marks (usually out of 100) form the basis of grades, with a grade value (out of 10) assigned to a range of marks. For each semester, the students are graded by taking a weighted average from all the courses with their respective credit points. Each semester's evaluation is done independently with a cumulative grade point average (CGPA) reflecting the average performance across semesters.



Gymkhana Lake

Rankings and reputation^[edit]

University and college rankings

General – international

ARWU (2022)^[60]

801-900

[QS \(World\) \(2023\)](#)^[61] 270

[QS \(Asia\) \(2023\)](#)^[62] 61

General – India

[NIRF \(Overall\) \(2022\)](#)^[63] 6

Engineering – India

[NIRF \(2022\)](#)^[64] 5

Government colleges:

[Outlook India \(2022\)](#)^[65] 4

Law – India

[NIRF \(2022\)](#)^[66] 6

Business/Management – India

[NIRF \(2022\)](#)^[67] 12

Architecture – India

[NIRF \(2022\)](#)^[68] 3

Internationally, IIT Kharagpur was ranked 270 in the [QS World University Rankings](#) of 2023^[61] and 61 in Asia.^[62] It was also ranked 801–900 in the [Academic Ranking of World Universities](#) of 2022.^[60]

In India, IIT Kharagpur ranked 4th among government engineering colleges by *Outlook India* in 2022^[65] and 6th among engineering colleges by the *National Institutional Ranking Framework* (NIRF) in 2023^[69], which also ranked it 7th overall.^[70]

The architecture department was ranked third among all architecture colleges in India by NIRF in 2022,^[68] [Rajiv Gandhi School of Intellectual Property Law](#) was ranked sixth among law schools^[66] and [Vinod Gupta School of Management](#) (VGSoM) was ranked 12 among management schools.^[67]

Placements at IIT Kharagpur^[edit]

The international placements began in 2006.^[71] Two foreign companies, oil giants [Schlumberger](#) and [Halliburton](#), visited IIT Kharagpur that year and offered annual salaries to the tune of \$80,000.^[72] The reason for late international placements was that earlier the IIT, it had to abandon its policy.^[73]

The top domestic compensation in 2008 came in at ₹1.8 million (US\$23,000) per annum.^[74] In the 2011 batch, [Goldman Sachs](#) recruited 10 students on a package of ₹2.6 million (US\$33,000) per annum.^[75]

[Barclays Capital](#) recruited 11 students with a compensation package of ₹2 million (US\$25,000) per annum in December 2009. The highest salary offered till now is ₹17 million (US\$210,000) per annum by [social networking site Facebook](#) in an off-shore recruitment (of which [employee stock ownership plans](#) [ESOPs] were offered valued at ₹10 million) in December 2010.^{[76][77][78]} The 2010 batch of BTech students saw 94% placements while the remaining preferred IIMs or entrepreneurship. [Deutsche Bank](#) recruited 9 students on a package of ₹1.5 million (US\$19,000) per annum.^[79] For the 2012 batch, [Facebook](#) has made the highest offer \$150,000 to four students.^{[80][81][82][83][84]} For the 2013 batch, three students have been offered salaries of ₹8 million (US\$100,000) per year while eight others have got offers of ₹7.5 million (US\$94,000) from [Google](#), [Facebook](#) and [Microsoft](#).^[85] For the 2014 batch, the highest package offered to a student stands at around ₹9 million (US\$110,000) from [Google](#).^[86]

As of the session 2021-2022, comprising both the phases of the placement drive, a total of 1723 offers (including PPOs) were made by several companies peaking with CTC of ₹2.4 Crore (US\$301,014) per annum which is the highest CTC ever recorded in history of IITs.^[87]

Student life^[edit]

General Championship^[edit]

The students of IIT Kharagpur compete among themselves in various events held under the purview of open-IIT and inter-hall events, and the results of the latter contribute to the points that determine the winner of General Championship. The four categories in which General Championships are decided are Sports, Social and cultural activities, Technology, and Hall affairs. The women's hostel together participate as a single team in all events with the exception

of sports, where women's team do not participate at inter-hall level. IIT Kharagpur participates in the [Inter IIT Sports Meet](#), held annually in one of the IITs by policy of rotation.^[88]



Alankar magazine's logo in 1984

The students choose their representatives by elections held under the control of the Technology Students' Gymkhana. A fortnightly newsletter called *The Scholar's Avenue*, named after the avenue common to the student halls, is published by an independent student body. A Hindi monthly newsletter, *Awaaz*, is published by another independent student body.^[89] Individual halls organise "Hall day" — an annual event that involves lighting and decoration of the organising hall, with a social gathering of students from all halls—during March. The event is also used by the halls to popularise their candidates for student body elections.

Disciplinary Committee^[edit]

Students who violate the code of conduct of the institute have to defend themselves in front of the Hall Disciplinary Committee (HDC), which investigates the case and prescribes punishment if necessary. Students may appeal against the punishment to the Appellate-cum-Liaison Committee known as Inter Hall Disciplinary Committee (IHDC). The IHDC submits its recommendations to the Senate, which finalises the punishment. Extreme cases of indiscipline are referred directly to the IHDC. The IHDC is empowered to give punishments to students for acts of indiscretion committed anywhere in India.^[90] IIT Kharagpur has strict provisions dealing with physical and mental harassment of junior students ([ragging](#)). Students found harassing their juniors are suspended from the institute, without going through the Disciplinary Committee.^[91]

Cultural Festivals^[edit]



Bands performing at Spring Fest 2012, IIT Kharagpur.

IIT Kharagpur has festivals like [Spring Fest](#), [Kshitij](#). Spring Fest, the annual socio-cultural fest of IIT Kharagpur is the largest student managed socio-cultural fest of Asia. It is held in January. Spring Fest includes cultural competitions in addition to stage shows (known as *Star-nights*) by singers and performers such as [Sunidhi Chauhan](#), [Farhan Akhtar](#), [Salim-Sulaiman](#), [Vishal-Shekhar](#), [K.K.](#), [Pritam](#), [Kailash Kher](#), [Shaan](#), [Breathe](#), [Led Zepplica](#) etc. The magnitude of

Spring Fest is huge and attracts participation from more than 150 colleges across India.^[14] IIT Kharagpur organises a techno-management festival known as Kshitij. It is the biggest techno-management festival of Asia with a total budget of more than 15 million and a total prize money worth ₹5 million (US\$63,000). An annual techno-management festival organised in January or February, it receives participation from foreign universities as well. Events include technical workshops, seminars, and competitions. To keep students updated with modern technology and address their curiosity the institute collaborates with other institutes to organise conferences and seminars.^[92]



Celebration of eco-friendly Diwali at IIT Kharagpur

[Robotix](#), the annual robotics competition held by IIT Kharagpur, is organised during Kshitij. IIT Kharagpur organises an annual inter-collegiate sports and games meet known as Shaurya. It is held in the autumn semester in October. Events include cricket, hockey, volleyball, basketball, badminton, table tennis, lawn tennis and aquatics. Workshops for archery, boxing and handball are held.

The Department of Computer Science and Engineering organises Bitwise IIT Kharagpur, an online programming contest annually in February. Programming and algorithmic challenges are given in a span of 12 hours. In Bitwise 2011, 5000 teams participated from 80 countries. Bitwise 2012 was held on 12 February 2012.

In January the Entrepreneurship Cell organises a Global Entrepreneurship Summit, which consists of guest lectures, workshops, a start-up camp and other events relating to [entrepreneurship](#) and starting up.

There are also other department festivals like *Esperanza* (organised by department of Electronics and electrical communication engineering) *Prithvi*^[93] (organised by department of geology)

A petroleum-themed technical fest 'Petrofiesta' is organised in the month of November by the Society of Petroleum Engineers IIT Kharagpur Chapter. This is a one of a kind fest which provides a platform for students from all over the country to compete and share their ideas and knowledge in the field of petroleum industry.^[94]

Student organisations^[edit]

Team KART (Kharagpur Automobile Racing Team)^[edit]

Kharagpur Automobile Racing Team, better known as "Team KART" is a group of students who like to explore the practical side of automotive engineering. The team designs and builds formula

student prototype race-cars and represents IIT Kharagpur at Formula Student UK & Formula Bharat.^[95] It was founded in 2008 and has made seven cars since—KX-1, K-1, K-2, K-2.2, K-3, K-4 & K-5. K-2 secured a rank of 67th out of 120 teams worldwide at Formula Student UK 2013. Several design oversights in K2 were fixed in K-2.2 by a new chassis and intake-exhaust system. The team participated in FDC 2015 and passed technical scrutiny and took part in dynamic events securing the first runners up position in Business Presentation and Cost Report, 2nd in Business Plan Presentation & 2nd in Cost and Manufacturing Report. With a new 3D printed intake in the K-3, the change in performance was significant. With K-4 the team participated in Formula Bharat 2019 and had it dyno tuned in Bangalore for better performance. The car K-5 saw a lot of improvement in the electronics subsystem design which included data acquisition system and a driver interface. The team participated in Formula Bharat 2020 with K-5 and brought great accolades to the institute by ranking 2nd in Business Plan Presentation, 6th in Engineering Design and 10th overall. K-5 was also the first car of the team to participate in all the dynamic events. The designing for the next car K-6 is ongoing.

Autonomous Ground Vehicle (AGV) Research Group, IIT Kharagpur[\[edit\]](#)

Team AGV is a robotics research group in IIT Kharagpur. Sponsored by SRIC, IIT Kharagpur as part of Centre for Excellence in Robotics, it has been at the forefront of robotics research in the campus.^[citation needed] The aim of the group is to build a successful Self-driving car for Indian roads. The team has tasted success in International competitions like [Intelligent Ground Vehicle Competition](#), placing 2nd in 2018 and 6th in 2013. The team is also a top-13 participant of the Mahindra Rise Prize SDC challenge. The group performs cutting-edge research in field of robot design, robot control, [computer vision](#), [Simultaneous localization and mapping](#), AI and [Motion planning](#). The group is headed by Prof. Debashish Chakravarty.^[citation needed]

A group spin-off startup, SF-bay area based Auro Robotics (now acquired by RideCell) is at the forefront of Self Driving Car research around the world.^[96]

Kharagpur Robosoccer Students' Group (KRSSG)[\[edit\]](#)

Kharagpur Robosoccer Students' Group, abbreviated to KRSSG, is one of IIT Kharagpur's first endeavours in robotics research. It is a research group sponsored by SRIC as part of Centre for Excellence in Robotics. The aim of the research group is to make autonomous soccer playing robots and participate in international competitions like [RoboCup](#) and [Federation of International Robot-soccer Association](#) (FIRA) Roboworld Cup. Students from all departments and years have been part of this including undergraduates and post-graduates. The principal investigator for the project is Prof. Jayanta Mukhopadhyay alongside Prof. A.K. Deb, Prof. D.K. Pratihar and Prof. Sudeshna Sarkar.

KRSSG participated in FIRA 2013 [Malaysia](#), FIRA 2014 [Beijing, China](#) and FIRA 2015 [Daejeon, South Korea](#), winning the bronze medal.^[97] Recently it also participated in the 3D Humanoid Simulation League 2016 held in [Leipzig, Germany](#), winning 7th position.

Gopali Youth Welfare Society[\[edit\]](#)

Gopali Youth Welfare Society is a government registered [NGO](#) run by students of IIT Kharagpur with the help of professors of IIT Kharagpur and local members of Gopali village.^{[98][99]} The main initiative of GYWS is an English Medium School, Jagriti Vidya Mandir. Quality education is provided absolutely free of cost to underprivileged children. The school is located in Tangasole

village, Salua outside the IIT Kharagpur campus. There are about 200 students enrolled in the school from Nursery to Class V. Books, Uniform and transportation is provided to the kids.^[100]

Entrepreneurship Cell[edit]

Main article: [Entrepreneurship Cell, IIT Kharagpur](#)

Entrepreneurship Cell (E-Cell)^[101] is a student's organisation, functioning under STEP (Science and Technology Entrepreneurs' Park), from within the institute, with the aim of promoting entrepreneurship among students throughout India.^[102] It provides mentoring and support to start-up companies and helps them with financing, through Venture Capitalists and incubation, through STEP and SRIC, IIT Kharagpur.

It conducts two major events, the Global Entrepreneurship Summit(GES), which is a three-day event, held in January at the institute, and the Entrepreneurship Awareness Drive (EAD), a 20-day event, consisting of guest lectures in 20 cities across India. Knowledge Camp is conducted annually for the benefit of students within IIT-KGP, while the Innovation Platform and Fund-a-KGPian programs continue throughout the year, to recognise and support innovative ideas among students of IIT-KGP, besides workshops and guest lectures throughout the year.

Professors Sunil Handa, Anil K. Gupta, [Sanjeev Bhikchandani](#), [Vinod Dham](#), Arjun Malhotra, [Rajat Sharma](#) and [Kiran Mazumdar-Shaw](#) are some of the speakers who have delivered lectures within and outside IIT-KGP.

E-Cell has been instrumental in the establishment of [Rajendra Mishra School of Engineering Entrepreneurship](#). The E-Cell has played a key role in the Deferred Placement Programme (DPP), whereby, a student can opt for placement a year after the completion of his/her course, in case they are involved in a start-up company. This is the first time such a programme is being offered at the undergraduate level in India.

Space Technology Student Society[edit]

Space Technology Student Society (spAts) is a student initiative that functions as the official student body of Kalpana Chawla Space Technology Cell (KCSTC), the contact point of Indian Space Research Organisation (ISRO) at IIT Kharagpur. It is responsible for organising the annual Space themed-festival the "National Students' Space Challenge (NSSC)".^[103] NSSC is the country's first and the largest astronomy and space science themed fest. After its conception in 2011, it has grown exponentially to witness over 2000 participants in 2018.^[104] spAts has been constantly instrumental in organizing space-themed talks, sky gazing sessions, lectures, discussions and presentations within IIT Kharagpur. The group publishes a bi-semester newsletter, 'The Moonwalk', on latest ventures in space technology and various astronomy related articles.^[105]

Megalith – The Annual Civil Engineering Tech-Fest[edit]

Megalith is the annual technical fest of the department of civil engineering, Indian Institute of Technology, Kharagpur held under the aegis of the Civil Engineering Society, IIT Kharagpur and the patronage of the Institution of Civil Engineers (UK), IIT Kharagpur chapter.^[106]

Technology Filmmaking and Photography Society[edit]

Technology Filmmaking and Photography Society (TFPS) is the students' interest club of IIT Kharagpur which aims to provide a platform to students interested in filmmaking and photography to work together and pursue their interests.^[107] The society also organises special screenings of acclaimed independent films and workshops, inviting industry professionals.^[citation needed]

Biswapati Sarkar of TVF fame is one of the founding members of the society. Alumni of the society have gone on to produce critically acclaimed documentaries and films such as *The Unreserved*.^[108] and pursuing careers in Filmmaking, Media and Advertising.

Alumni^[edit]

Main article: List of IIT Kharagpur alumni

Alumni awards^[edit]

IIT, Kharagpur awards recognizes the professional achievements of its alumni annually with the Distinguished Alumnus Award on the Institute Convocation Day. IIT, Kharagpur also recognizes alumni who provided outstanding service to the institute with a Distinguished Service Award. The Young Alumni Achiever Award recognizes young alumni, aged 45 or younger, who have achieved success and recognition in their profession.^[109]

Alumni initiatives^[edit]



The [Vinod Gupta School of Management](#) was built from alumni funding

The [Vinod Gupta School of Management](#) (VGSOM) and [Rajiv Gandhi School of Intellectual Property Law](#) were established with donated funds from [Vinod Gupta](#) (founder, Infogroup) along with support from the government of India. VGSOM started in 1993 with a batch of 30 students. Other centres built by funding from alumni include the G.S. Sanyal School of Telecommunication and [VLSI-CAD](#) laboratory. The IIT Foundation, started by Vinod Gupta in 1992, is the alumni association of the institute with chapters in cities in India and abroad. Subrata Gupta is the Director of West Bengal Industrial Development Corporation.^[110] The alumni association publishes the quarterly newsletter *KGPian* for the alumni.^[111] The institute also publishes a

monthly e-newsletter titled *KGP Konnexion* for alumni.^[112] IIT Kharagpur has a dean for alumni affairs to manage liaisons with alumni. The US-based alumni of IIT Kharagpur have started the *Vision 2020* fundraiser, to provide infrastructure (like labs and equipment) and attract and retain faculty and students. The objective of Vision 2020 is to raise a \$200 million endowment fund by 2020 for technology education, research and innovation related growth of the institute.^[113] On 20 April 2013 ex-graduates from IIT Kharagpur formed a group *Kharagpur-in-Mumbai group* and held a meeting in Bandra, Mumbai to chalk out "the easiest and pragmatic ways" on how they can give back to society.^[114]

Indian Institute of Technology Madras

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	IIT Madras P.O., Chennai 600036, INDIA
Contact Person For Admission:	Deputy Registrar (Academic Courses)
Designation:	Deputy Registrar
Email:	drcourses@iitm.ac.in
Alternate Email:	cacad@iitm.ac.in
Phone Nos:	91-44-22578035
Fax No:	91-44-22578042
Mobile No.:	

About the Institute

Come and experience a-day-in-life-at-IIT Madras: get a guided campus tour, attend student culture Open House and ask questions directly to the Director/Dean of IIT Madras!
Register now for IIT Madras Demo Day (June 17 and 18) - a 1 day event, curated just for you! Register now at: <https://visit.askiitm.com/2023>
For those who cannot attend, we also have a virtual event on June 24th. Register here:askiitm.com/visitonline

The Indian Institute of Technology Madras (IITM) is among the finest, globally reputed higher technological institutions that are sensitive and constructively responsive to student expectations and national needs. IITM was founded in 1959 as an ‘Institute of National Importance’ by the Government of India with technical and financial assistance from the Federal Republic of West Germany. IITM celebrated its Diamond Jubilee in the year 2018-19. During these 60+ years, IIT Madras has gained a reputation for the quality of its faculty and the outstanding caliber of the students in the undergraduate, postgraduate, and research programs. IITM is recognized as a center of academic and research excellence offering engineering, science, management, and humanities education on par with the best in the world.

IITM has been ranked No.1 in the ‘Overall’ Category for the fourth consecutive year in India Rankings 2022 released by the National Institutional Ranking Framework, Ministry of Education, Government of India. The Institute has also been ranked No.1 in the ‘Engineering Institutions’ category in the same rankings for seven consecutive years – from 2016 to 2022. In the category of ‘Research Institutions’ launched in 2021, IIT Madras has been ranked #2 in the country in back-to-back years (2021 and 2022). IIT Madras was also adjudged as the ‘Top Innovative Institution’ in the country for three consecutive years (2019, 2020, and 2021) in the Atal Ranking of Institutions on Innovation Achievements (ARIIA), which was launched by the Innovation Cell of the Ministry of Education.

IIT Madras offers B.Tech., B.S. and Dual Degree programs in thirteen disciplines; M.Sc. in Mathematics, Chemistry, and Physics; M.Tech. in several advanced streams; M.B.A, E.M.B.A; M.A., and research degrees through the M.S. and Ph.D. programs and online [B.S. in Data Science and Applications degree, with an exit option for a B.Sc. in Programming and Data Science](#). IIT Madras has recently launched the B.S. in Electronic Systems.

The Institute has seventeen academic departments and many advanced research centers in various disciplines of engineering and pure sciences. A faculty of international repute, a brilliant student community, excellent technical and supporting staff, and an effective administration have all contributed to the pre-eminent status of IIT Madras.

IITM is an autonomous body under the administrative control of a Board of Governors appointed by the Government of India. IITM is a self-contained residential Institute with more than 600 faculty, 10000 students, and 600 administrative and supporting staff. It has established itself as a premier center for teaching, research, and industrial consultancy in the country.

IITM campus is famous for its serene and scenic natural environment. Comprising 650 acres of lush green forest, including a large lake and a rich variety of flora and fauna, the campus is the pride of its residents and provides an ideal setting for serious academic and developmental pursuits. Life at IIT Madras is an exciting mix of academic, sporting, and cultural activities. Our

graduates have succeeded with brilliance all over the world, and leave a distinctive mark everywhere they go giving IIT Madras its global reputation.

Fee Structure

Fees for the Indian/OCI/PIO students to be admitted in the academic year 2023-24

S.No	Items of Fees & Deposits	(Value in Rs.)
		B.Tech./ DD
I. INSTITUTE FEES		
A. One time Fees:		
1	Admission fee	150
2	Grade card fee	150
3	Provisional certificate	100
4	Medical Exam fee	100
5	Student welfare fund	1000
6	Modernization fee	300
7	Alumni Life Membership Fee (NS)	3000

8	Publication fee (NS)	250
	Total A (One Time Fees)	5050

B. Semester Fees:

1	Tuition fee +	100000
2	Examination fee	350
3	Registration-Enrolment fee	200
4	Medical fee	700
5	Seat Rent	6000
6	Fan, Elec. & Water Charges (Hostellers Only)	4100
	Total B (Jul-Nov 2023 semester fee)	111350

C. Deposits (Refundable):

Institute Deposit and Library Deposit (each Rs.1000)	2000
Institute fees payable through online at https://www.iitm.ac.in/academics & https://pay.iitm.ac.in	118400

		SC/S T/Pw D	18400
	Total Fee Day scholars (A+B+C)	GE/O BC/E WS	114300
		SC/S T/Pw D	14300

II. HOSTEL FEES & MESS CHARGES PER SEMESTER (Subject to Revision)

S.No	Items of Fees & Deposits	H os tel le r	D y Sc hol ar
1	Hostel Admission fee	2 5 0	-
2	Hostel Deposit (NS)- (refundable)	3 0 0 0	-
3	Estt.'A' charges	6 5 0 0	-
4	Estt.'B' charges	2 0	-

			0	
			0	
5	Extra-curricular Fee	1 5 0 0	15 00	
6	Advance Dining charges (includes Food Wastage Disposal)	1 7 2 0 0	0	
7	Medical Insurance Premium (per annum – subject to revision)	1 8 0 0	18 00	
8	Student Wellness Fee	2 0 0	20 00	
9	Other fees (Optional) includes Saarang / T-shirt of Shaastra / L-tap / Hostel Night Charges	4 7 5 0	0	
	Hostel Fees payable through online at https://ccw.iitm.ac.in & https://dost.iit.ac.in/iitmdost/	3 7 2 0 0	35 00	

N Non-Statutory fees
S

- + a) SC/ST/PwD students are exempted from payment of tuition fee irrespective of their parental income.
- b) GE, OBC-NCL, EWS students whose family income is less than Rs.1 lakh per annum shall get full remission of the Tuition fee.
- c) GE, OBC-NCL, EWS students whose family income is Rs.1 lakh to Rs.5 lakhs per annum shall get remission of 2/3rd of the tuition fee.
- d) All the students shall have access to interest free loan under Vidyalaxmi scheme for the total portion of the tuition fee payable

Dual Degree students have to pay B.Tech. fees for the first 8 semesters and M.Tech. fees for 9th & 10th semesters

Fees for Foreign Nationals to be admitted in the academic year 2023-24

S.No	Items of Fees & Deposits	(Value in Rs.)
I. INSTITUTE FEES	B.Tech./DD	

A. One time Fees:

1	Admission fee	2000 0
2	Grade card fee	
3	Provisional certificate	
4	Medical Exam fee	
5	Student welfare fund	
6	Modernization fee	
7	Alumni Life Membership Fee (NS)	
8	Publication fee (NS)	
	Total A (One Time Fees)	2000 0

B. Semester Fees per semester:

1	Tuition fee per semester	I N R 30 00 00
2	Medical fee	I 70 N 0 R

3	Seat Rent	I 60 N 00 R
4	Fan, Elec. & Water Charges (Hostellers Only)	I 41 N 00 R
	Total B (Jul-Nov 2023 semester fee)	I 31 N 08 R 00
C. Deposits (Refundable)		
	Institute Deposit and Library Deposit (each INR 1000)	20 00
	Institute fees payable through online at https://www.iitm.ac.in/academics & https://pay.iitm.ac.in	GRAND TOTAL 33 28 00

II. HOSTEL FEES & MESS CHARGES PER SEMESTER (Subject to Revision)

1	Hostel Admission fee	I 25 N 0 R
2	Hostel Deposit (NS)- (refundable)	I 30 N 00 R

3	Estt.'A' charges	I 65 N 00 R
4	Estt.'B' charges	I 20 N 00 R
5	Extra-curricular Fees	I 15 N 00 R
6	Advance Dining charges	I 17 N 20 R 0
7	Medical Insurance Premium (per annum)	I 18 N 00 R
8	Student Wellness fee	I 20 N 0 R
9	Other fees (Optional) includes Saarang / T-shirt of Shaastra / L-tap / Hostel Night Charges	I 47 N 50 R
Hostel Fees payable through online at https://ccw.iitm.ac.in & https://dost.iit.ac.in/iitmdost/		I 37 N 20 R 0

Academic Structure

The institute offers high-quality academic programs leading to B.Tech. Dual degree (B.Tech. and M.Tech.), B.S (Biological Sciences), Dual degree (B.S. and M.S.) (Physics), [B.S. in Data Science and Applications](#), M.Sc., M.A., M.B.A., E.M.B.A., M.S. (Research), and Ph.D. degrees through its technology, engineering, science, management, and humanities and social sciences departments. Students seeking a wholesome, academically rigorous, intellectually challenging,

personally enriching and value-laden educational experience have for long found IIT Madras an ideal institute for pursuing their higher studies.

The four-year B.Tech./B.S. and the five-year dual degree (B.Tech. + M.Tech. and B.S. + M.S.) programmes consist of an amalgamation of core courses in the chosen engineering/science discipline along with courses in basic sciences, humanities and practical engineering skills. Laboratory courses and an industry internship give students a platform to test the fundamentals acquired in the classroom. The institute follows a policy of relative grading and continuous assessment done through class tests, assignments and examinations. The curriculum of the five-year dual degree programme is common with the four-year programme for the first three years, after which electives are offered based on the chosen M.Tech./M.S. specialization.

The design of the undergraduate curriculum at IIT Madras and course-work requirements in both programs is designed to be highly flexible, with various stream-specializations within each program. Electives constitute nearly 50% of the curriculum at IIT Madras, which also allow students to take courses across different Departments. Students would also have the option of upgrading to a 5-year Dual degree program (i.e. getting an additional MTech or M.S. degree).

Honours Programme

Students admitted to IIT Madras in four-year B.Tech. or five-year dual degree programmes can opt for B.Tech. (Honours) during fifth semester.

They should have a minimum CGPA (Cumulative Grade Point Average) of 8.5 (on a scale of 10), and should have cleared all the courses as prescribed in the curriculum in the first attempt. In addition, B.Tech. (Honours) students must complete additional courses specified and a project. Dual degree students who meet the above criteria will be awarded B.Tech. (Honours) and M.Tech. /B.S. (Honours) and M.S. degrees.

Programme Description

With focus on research and development, in the complex changing scenario of today's industry, IITM curriculum constantly reflects key trends and emerging areas of interest. The curriculum is reviewed regularly and changes are incorporated to enable IITM students to be well-prepared for the future. The greatest strengths of the IITM curriculum are its academic rigor and the variety it offers one to pursue one's interest in diverse disciplines ranging from engineering, technology, pure sciences, management, and humanities and social sciences including economics, sociology, philosophy, development studies and literature. Interdisciplinary learning is encouraged and achieved through the policy of giving students freedom in choosing their electives and minor streams. The curriculum, pedagogy and the atmosphere together infuse in our students a strong spirit of inquiry, the joys of learning, and the excitement of discovery.

Credits

- (i) One credit indicates an effort of 50 minutes (*1 credit-hour*) per working week.
- (ii) One *credit-hour* of lecture is assumed to need two *credit-hours* (1 hour 40 minutes) outside the class room in terms of student effort to thoroughly comprehend the subject material, do the home works etc. Thus, a course with 3 lectures a week will be a $3+(3 \times 2)=9$ credit course, indicating that a student needs to put in 9 *credit-hours* (7 hours 30 minutes) of work a week on this course, inside and outside the classroom put together.

(iii) A one *credit-hour* supervised session with no effort required outside should count for one credit. Thus, an afternoon (2 hours 30 minutes) laboratory session, where the student runs an experiment, collects data, interprets it and writes a report should be awarded 3 credits. If a laboratory course requires effort outside of the allotted 2.5 hour slot, appropriate credit should be awarded (1 credit for 1 *credit-hour*, i.e., 50 minutes). In the same vein, a 1 *credit-hour* tutorial session should be awarded 1 credit, if no work is expected outside.

The number of credits for various programmes of study are given below:

B.Tech./B.S	: 432 ± 2
B.Tech. (Honours)	: 459 ± 2 (465 ± 2 for Computer Science)
DD [B.Tech. + M.Tech.]	: 553 ± 2 (For IDDD program 550 credits)
DD [BS + MS]	: 553 ± 2
DD[B.Tech.(Honours)+M.Tech.]	: 580 ± 2 (For IDDD program 577 credits)

Inter-disciplinary Dual Degree programmes (ID-DD) The Institute also offers 'Inter-disciplinary Dual Degree programmes' (ID-DD) in the following areas:

1. Advanced Materials and Nano Technology
2. Biomedical Engineering
3. Computational Engineering
4. Data Science
5. Energy Systems
6. Robotics
7. Tech M.B.A
8. Quantum Science and Technology
9. Complex Systems & Dynamics
10. Cyber Physical Systems
11. Electric Vehicles
12. Quantitative Finance
13. Atmospheric & Climate Sciences

14. Public Policy

ACADEMIC PROGRAMMES (in detail)

AEROSPACE ENGINEERING – IIT Madras

Four-Year B.Tech. Programme

Aerospace engineers are concerned with the design, analysis, construction, testing and operation of flight vehicles, including airplanes, helicopters, rockets and spacecraft. The core programme is based on the fundamentals of fluid dynamics, materials science, structural analysis, propulsion, flight controls and guidance, and aerospace design. The curriculum also includes courses in basic sciences, basic engineering and humanities, along with flexibility to choose from a basket of post-graduate professional and free electives. An optional individual engineering project in the final year is also available.

Five-Year Dual-Degree Programme (B.Tech. and M.Tech.)

The dual-degree is an integrated programme in Aerospace Engineering that revolves around the design, analysis, construction, testing and operation of flight vehicles, including airplanes, helicopters, rockets and spacecraft. The core programme is based on the fundamentals of fluid dynamics, materials science, structural analysis, propulsion, flight controls and guidance, and aerospace design. The curriculum also includes courses in basic sciences, basic engineering and humanities, along with flexibility to choose from a basket of professional and free electives. A number of M.Tech. - level electives are available for further specialization in one of the above areas. *Teams of dual degree students also go through a flagship design course over one year (6th and 7th semesters) that involves design, development, fabrication and demonstration of Unmanned Aerial Vehicles (UAVs). This is a course that synthesizes the theoretical concepts learnt in the courses related to aerodynamics, aircraft structures and flight mechanics to realize the UAV hardware.* Furthermore, students carry out a fourteen-month guided project in their area of interest, and can avail modern experimental and computational facilities of the department and the institute for their project work.

For detailed information on faculty expertise, courses offered, research programme, laboratories and infrastructure facility and various department level student activities please visit
<http://www.ae.iitm.ac.in/>

BIOTECHNOLOGY

The Dept of Biotechnology at IIT Madras offers two unique 4-year undergraduate degree programs, a B.Tech. degree in Biological Engineering and a B.S. degree in Biological Sciences.

Biology at school level is not a prerequisite for admission to these programs. Students lacking high-school biology can easily bridge the gap with the introductory course taught in the first semester. The design of the undergraduate curriculum at IIT Madras and course-work requirements in both programs is designed to be highly flexible, with various stream-specializations within each program. Electives constitute nearly 50% of the curriculum at IIT Madras, which also allow students to take courses across different Departments. Students would also have the option of upgrading to a 5-year Dual degree program (i.e. getting an additional MTech or M.S. degree) within the Biotechnology Department or a 5-year Inter-Disciplinary Dual Degree (IDDD) program if they fulfil the institute requirements for doing so.

B.Tech. Degree Programme in Biological Engineering

The B.Tech. program in Biological Engineering has a broad-based curriculum, which provides a solid foundation towards the application of engineering principles to biological systems. The programme emphasises core courses in basic sciences, engineering and molecular bio-sciences and stream specializations based on a basket of electives in different areas such as bioprocess engineering, biomaterials engineering and computational biology. The knowledge in different areas of the biology-engineering interface enables the students to evolve interdisciplinary approaches to problem-solving and develop bio-technologies having applications in diverse areas such as biopharmaceuticals, diagnostics, biomaterials, bio-energy, food processing and environment.

B.S. Degree Programme in Biological Sciences

The B.S. program in Biological Sciences provides a strong foundation in various aspects of modern biology. This programme encompasses the study of living organisms and life processes at all levels, from individual organisms to tissues, cells, subcellular structures, and molecules. The programme offers fundamental courses in biological sciences and stream specializations in bio-medical sciences. The curriculum imparts specific skills on interfacing cellular, molecular and computational biology. A unique feature which differentiates the Biological Sciences program at IIT Madras from other such undergraduate programs is the level of training that students get in quantitative and analytical skills, which gives them a distinct advantage compared to other graduates in bio-sciences. These skills are highly sought after by industry as well as by top-notch institutions offering doctoral programs in bio-sciences.

For detailed information on faculty expertise, courses offered, research programme, laboratories and infrastructure facility and various department level student activities, please visit
<https://biotech.iitm.ac.in/>

CHEMICAL ENGINEERING

Four-Year B.Tech. Programme

Chemical engineering deals with the development, control and improvement of processes and materials. Chemical engineers work in diverse fields such as petroleum refining, petrochemicals and polymers, personal care products, semiconductor manufacturing, food and agricultural products, conventional and unconventional energy production, batteries, fertilizer technology,

drug discovery, water and water distribution networks, and analysis, prevention and control of environmental pollution. They also work in design, construction, operation, management and safety of the plants built for these processes. Research in chemical engineering focusses on developing cleaner, safer and more efficient processes that ensure sustainability of natural resources.

For detailed information on faculty expertise, courses offered, research programme, laboratories and infrastructure facilities, and various Department-level student activities, please visit:
<https://che.iitm.ac.in/>

CIVIL ENGINEERING

Four-Year B. Tech. Programme

A Civil Engineer is concerned with planning, analysis, design, construction and maintenance of a variety of facilities such as buildings, highways and railways, airports, waterways and canals, dams and power houses, water treatment and waste water disposal systems, environmental quality control, docks and harbours, bridges and tunnels. A civil engineer is also required to deal with critical problems of today such as disaster mitigation and management, constructing offshore structures for oil production, flood forecasting and flood control, traffic congestion, transportation planning, use of non-conventional energy resources, for example, wind, tides, waves, etc. The breadth and diversity of the civil engineering profession make it particularly attractive. Computer Aided Design (CAD) and software development for various civil engineering facilities have become integral parts of civil engineering profession.

All the students are first admitted to the 4-year B Tech programme in Civil Engineering. Students who are interested in upgrading to the Dual degree programme will be provided option at the end of their 6th semester. By then, they will have a better perspective of the specializations and will be in a position to make a right choice. The allocation of specialisation will be done based on the academic performance at the end of 6th semester and choice exercised by the student.

Five-Year Dual Degree Programme (B. Tech & M. Tech) (as upgradation option from B. Tech)

The following specializations are available for B. Tech students who are upgrading from B. Tech (Civil Engineering) to Dual Degree programme in Civil Engineering.

Building Technology and Construction Management (CE1)

Building Technology and Construction Management (BTM) is a multi-faceted group of faculty members who work in broad areas of *Materials and Construction*, *Construction Engineering & Management*, and *Functional Design of Buildings and Infrastructures*.

BTM has four independent state-of-the-art laboratories; these are *Acoustics and Lighting Laboratory*, *Materials and Systems Laboratory*, *Advanced Surveying Instruments Laboratory*, and the *Integrated Construction Practice* (ICP) Laboratory. The ICP laboratory is the nucleus for a consortium of facility owners, contractors, consultants and researchers and serves as a learning center for architects, civil, electrical and mechanical engineers on the use of Digital tools such as Building Information Modeling (BIM) and integrated project delivery. In essence, the

laboratories facilitate in preparing future generations of professionals with the latest tools to improve industry effectiveness.

The group is focused towards providing new, innovative and efficient methods of construction practice for buildings and infrastructures. BTCM shoulders responsibility of spearheading the industry sponsored *M. Tech (UoP) in Construction Technology & Management* for M/s Larsen & Toubro Limited, India and PG Diploma Course in *Metro Rail Technology and Management* for M/s Chennai Metro Rail Limited. Besides, the faculty members undertake socially relevant projects like restoration and rehabilitation of heritage structures in India and abroad, and have won awards for their contributions.

This unique specialization offers courses covering a range of subjects in Building Sciences, Construction Materials, and Construction Engineering and Management areas, which include: (1) *Building Science*: Functional design of buildings, Buildings acoustics & noise control, Building services, and Energy management in buildings; (2) *Construction Materials*: Modern construction materials, Characterisation of construction materials, Advanced concrete technology, and Maintenance & rehabilitation of constructed facilities; and (3) *Construction Engineering and Management*: Construction methods and equipment, Sustainable Construction, Construction planning and control, Construction project management, Construction economics and finance, Quality and safety management, Lean construction, Construction contracts & specifications, and Computer applications in construction.

Environmental Engineering (CE2)

Environmental Engineering is a group of seven core and allied accomplished faculty members with diverse research expertise. The broad teaching and research areas of the group are Environmental Engineering, air quality management, atmospheric and climate science, etc. Some specific areas of research under these broad areas include:

Environmental Engineering: Air and water quality modelling, monitoring and management; Water and wastewater treatment; Solid and hazardous waste management; Bioremediation of contaminated sites; Subsurface contaminant transport, air quality management and control, atmospheric and climate science, etc.

This interdisciplinary Programme is designed to meet the need of government departments/public sector and industry, with emphasis on various aspects like protected water supply and sanitation for public health, pollution control, sustainable development, and fundamental science of various climate interaction and processes. The topics to be covered include protected water supply, waste water management, air pollution control, solid waste management, ground water pollution-fate, transport and remediation, environmental planning and impact assessment, modelling of air and water quality environmental chemistry, environmental microbiology biotechnology and environmental systems analysis, fundamentals of atmospheric and climate sciences.

The laboratory is equipped with sophisticated instrumentation facility with Gas chromatographs, High pressure Liquid Chromatograph, Ion chromatograph, Elemental analyser, Total organic compound analyser, FTIR and UV Spectrophotometers is one of the best facilities in the Country for environmental sample analyses. State-of-the-art and high end instruments for air pollution and climate research including aerosol research. The climate modelling facilities including WRF, GEOS – Chem, CALPUFF, AERMOD are routinely used to deal with air pollution and climate change related studies.

Geotechnical Engineering (CE3)

Geotechnical engineering is an active group of nine faculty members with expertise in different areas. Some of the major research areas include Soil mechanics; constitutive modelling; geomechanics; shallow and deep foundations; numerical analysis; soil dynamics and earthquake geotechnical engineering; soil stabilization, geosynthetics and reinforced soil structures; tunnelling and underground excavations; field instrumentation and monitoring; geoenvironmental engineering; unsaturated soil behaviour; reliability analysis of geotechnical systems.

Well-equipped laboratories aid in both imparting world-class education to undergraduate and postgraduate students and facilitate fundamental and applied research. Some important facilities available include geotechnical centrifuge, cyclic triaxial test setups, Bishop-Wesley stress path systems, large-scale geosynthetic pull-out test facility, resonant column test apparatus, cyclic simple shear test apparatus, atomic absorption spectrometer, gas chromatography, high-pressure gas sorption analyzer, thermo gravimetric analyzer (TGA/DTA), differential scanning calorimeter, Fourier transform infrared spectroscopy, xenon arc weather meter, MASW, WP4, SWCC cell, and a shake table, temperature control triaxial for gas hydrate research.

Faculty members actively participate in research projects and offer several short-term courses and training programmes for college teachers and practicing engineers. A wide range of subjects such as advanced soil mechanics, advanced foundation engineering, rock mechanics, soil exploration and testing, applied soil mechanics, soil dynamics and machine foundations, earthquake geotechnical engineering, geoenvironmental engineering, geosynthetics and reinforced soil structures, ground improvement, finite element analysis and constitutive modelling of soils, geotechnics for infrastructures, and seismic site characterization are included in the curriculum.

Hydraulic and Water Resources Engineering (CE4)

The Hydraulic Engineering laboratory, established in 1969, is one of its kind in the country and has facilities like large towing tank, different types of flumes, open air physical models, and latest table-top hydraulic models.

Hydraulics and Water Resources Engineering is a group of nine core and allied accomplished faculty members with diverse research expertise. Some specific areas of research under these broad areas include: Hydrologic modelling including stochastic and spatial hydrology; Conjunctive use of surface and ground water; Aquifer modelling and management; Urban water supply; Water resources planning and management; GIS/remote sensing applications; river engineering.

The major emphasis in Hydraulic and Water Resources Engineering is to provide specialized and practical knowledge in: soft computing in water resources, hydrologic modelling, stochastic and spatial hydrology, computational hydraulics, river flow, flood mitigation, dam-break flow, tsunami and storm surge propagation, coastal and estuarine flow, conjunctive use of surface and ground water, aquifer modelling and management, pollutant and sediment transport in rivers, water resources planning and management, irrigation water management, climate change, urban water supply and GIS/remote sensing applications. The laboratory has several flumes for conducting various open-channel flow experiments. In addition, the laboratory is equipped with several table top models (hydraulic benches) to demonstrate basic hydraulic and hydrologic phenomenon. Further, a number of high end workstations are available to meet the requirements of the graduate students. The computational laboratory is equipped with commercial software packages such as ArcGIS, ERDAS, MIKE FLOOD, TUFLOW, FLO-2D, MODFLOW, MT3D, HYDRUS,

HEC-GeoHMS, HEC-RAS, SWMM, SWAT, Comsol Multiphysics, RSWMS, FE FLOW. Advanced technical, computational and mathematical software tools required for design and simulation of water and environmental systems are available for class projects and research use. Faculty members undertake many socially relevant projects and offer various training programmes to solve pressing water and environmental issues in a sustainable way.

Structural Engineering (CE5)

Structural Engineering with a dynamic group of sixteen faculty members extensively involve with theoretical, practical and real problem solving expertise in various themes. The broad areas of research of the group include: Earthquake Disaster Mitigation, Computer Aided Analysis and Design, Structural Dynamics, Structural Stability, Structural Optimisation, Design of Masonry, Fracture Mechanics, Reinforced and Pre-stressed Concrete, and Steel Structures, precast and prefabricated structural systems.

This Programme deals with the following major areas: advanced structural mechanics, finite element analysis, structural dynamics, structural stability, structural reliability, structural optimization, reinforced and pre-stressed concrete, fracture mechanics, precast and prefabricated structures, steel structures, design for wind and earthquake, plates and shells, bridges, tall buildings, towers, computer applications in structural engineering, fracture mechanics, masonry structures, power plant structures, composite structures.

The Structural Engineering Laboratory, one of the best experimental facilitator in the country, has two facilities for testing and casting of large scale structural systems. Large scale prefabricated specimens can also be tested. Testing facility has two zones; first is provided with a strong floor with loading frame capacity of 2000kN. Other test facilities such as 6000kN compression testing machine, and high and low frequency pulsators for fatigue test machines. Various academic and research activities are undertaken in this zone. The second testing zone has a strong wall and floor system with 1000kN attached with computer controlled actuators for pseudo-dynamic tests. In addition, relaxation and smart materials testing facilities are available. A shake table facility for performing earthquake resistant studies on buildings is a new addition to the Structural Engineering Laboratory.

The Structural Engineering group continues to participate for social and industrial development of the country by involving in various challenging sponsored research and industrial consultancy projects to solve several practical problems including analysis, design, optimization, repair and retrofitting of buildings, bridges and other industrial structures. This group actively participates in preparation of design provisions for various standards and codes.

Transportation Engineering (CE6)

The programme covers planning, design, operations, and management of roadways, broadly under two major areas of Pavement Engineering and Traffic Engineering & Transportation Planning. Under Pavement Engineering, Characterization of pavement materials; Investigation on binders; Performance based design of bituminous mixes; Concrete pavements; Valorization of Waste Materials; Pavement construction and maintenance; and Road infrastructure asset management are some of the research topics of interest. Important facilities available include vacuum capillary viscometer, simple performance test equipment, gyratory compactor, CORELOK, rotary evaporator, ARRB's handheld Roughometer, Dynamic Cone Penetrometer and automatic penetrometer. Under Traffic Engineering & Transportation Planning, Traffic operations and control, Intelligent Transportation Systems (ITS), Traffic-flow modeling, Traffic

Simulation, Congestion Analysis, Activity-based travel demand modeling, Dynamic and stochastic modeling of transportation networks, urban freight transportation, sustainable transportation, and traffic safety are some of the major areas of research. A state-of-the-art ITS Laboratory receiving real-time local traffic data from various sensors such as video, infra-red sensor, radar sensor, inductive loop sensors, wi-fi and Bluetooth sensors, and GPS devices is one of the major facilities available.

Besides, an exclusive 24-hour computing facility, with latest versions of several software packages for research is accessible to graduate students and research scholars. The programme trains the students with the needed expertise and proficiency for a professional career in the field of transportation engineering. The students are imparted hands-on training on using state-of-the-art equipment by associating them in several industry-sponsored research projects. The students specialized in the area of Transportation Engineering are well placed in leading consultancy and research organizations/institutions in India and abroad.

For detailed information on faculty expertise, courses offered, research programme, laboratories and infrastructure facility and various department level student activities please visit
<https://civil.iitm.ac.in/>

COMPUTER SCIENCE AND ENGINEERING

Four-Year B.Tech. Programme

The program deals with scientific and engineering aspects of designing and building computing systems. Computer Science aspects include foundational subjects such as Programming, Design and Analysis of Algorithms and Theoretical Computer Science. Building on these foundations, the engineering aspects address the theoretical and applied aspects of system building including Computer Organization and Architecture, Systems and Application Software, Compiler Design, Database Systems, Computer Networks, Artificial Intelligence, Machine Learning, Cryptography, Big Data and Human-Computer Interaction.

For detailed information on faculty expertise, courses offered, research programme, laboratories and infrastructure facility and various department level student activities please visit
<http://www.cse.iitm.ac.in/>

ENGINEERING DESIGN

The Department of Engineering Design was established in the year 2006 with a focus on interdisciplinary teaching and research to meet the industry demand for professional designers. The mission of the department is to develop design professionals with a strong multidisciplinary background and a deep sense of aesthetics, with a focus on emerging fields of engineering, and design for life. The academic programme is aimed to impart important class-room and practical learning aspects in the development of a concept, form, and engineering to meet functional, aesthetic, and environmental needs in designing a product or a device. The mission of the programme is to make IIT Madras a Global centre of Excellence in Engineering Design. We are looking at students with exceptional abilities to provide leadership to the Indian industry in the area of design and manufacture of new products in an increasingly globalised economy.

Five-Year Dual Degree Programme (B.Tech. & M.Tech.) in Engineering Design

Engineering Design is an exciting dual degree programme at IIT Madras and only one of its kind. The programme consists of B.Tech. and M.Tech. degrees in Engineering Design with a post graduate specialization in Automotive Engineering or Biomedical Design. The choice between these 2 specializations is made at the end of 4th semester based on the student's academic performance, choice and seat availability. Students can also opt for interdisciplinary dual degree programs (IDDDs) such as robotics, data science, electric vehicles, etc., offered at IIT Madras.

Engineering Design with M.Tech. in Automotive Engineering

This is a dual degree programme with a B.Tech. in Engineering Design and a M.Tech. with specialization in Automotive Engineering. The objective of the programme is to produce engineering graduates well versed in the process of design with the domain knowledge in automotive systems. This involves designing products to meet customer requirements, for the required quality standards, taking into account manufacturability, serviceability, reliability, human factors, efficiency of operation and economics.

The programme represents a shift in emphasis from analysis to skill sets appropriate for design, development and prototyping and will encompass best design practices followed world-over. Emphasis on creativity, efficient use of materials, sensitivity to environment and managerial skill development are some of the aspects of the programme. The curriculum focuses on the aspects of learning to learn and teaching of concepts through case studies especially in unstructured design situations.

Engineering Design with M.Tech. on Biomedical Design

This is a dual degree programme with a B.Tech. in Engineering Design and a M.Tech. with specialization in Biomedical Design. A medical equipment is any instrument, apparatus, or material that is used in diagnosing, treating, and/or preventing diseases in humans. Medical devices constitute one of the fastest growing industries. An analysis of the costing of medical devices reveals that the highest component is the intellectual content and development costs of the invention, and the actual product cost is very much less by comparison.

The major objective of this course is to develop biomedical designers who have the background to design, manufacture, test and market such products. Biomedical instrumentation, as referred to in many Indian universities, is usually tuned towards maintenance of medical instrumentation and is heavily biased towards electrical engineering. Though such courses are no doubt important, there is a need to develop biomedical designers, who have an interdisciplinary background in mechanical design, controls, mechatronics and manufacturing science. Apart from

this they should be well versed in human anatomy and physiology, mechanics as applied to physiology and biology, biosensors, protocol and procedures for animal models, signal processing and so on. This programme systematically imparts the corresponding skills.

For detailed information on faculty expertise, courses offered, research domains, laboratories and infrastructure facilities, and various department level student activities please visit
<http://www.ed.iitm.ac.in>

ELECTRICAL ENGINEERING

Four-Year B.Tech. Programme

Electrical Engineering (EE) education, globally, occupies an important position because of the rapid advances in wireless, fibre-optics, renewable energy, robotics, VLSI, sensors, instrumentation, and other areas related to EE. The growth in EE has been exponential in the last two decades. EE technologies impact all aspects of daily life in increasing measure. With the deployment of 5G, deep learning, data analytics, cyber physical systems, IoT, electric vehicles, smart cities and power grids, electrical engineering will continue to grow and provide new technological opportunities.

At IIT Madras, the EE department offers a comprehensive and integrated electrical engineering programme that covers all the major areas within EE - communications and signal processing, power systems and power electronics, semiconductor technology and nano-electronics, control systems and optimization, electronic systems and instrumentation, photonics and RF, and integrated circuits and systems. EE Department has 70 faculty members whose expertise covers all the major areas of EE and ~1400 students, who are enrolled in one of our undergraduate, master, or doctoral degree programmes, all housed under one roof. The IITM EE faculty are recognised in India and internationally for their contributions towards the advancements through research, technology development, and entrepreneurship. Faculty and students of EE department work on innovative and cutting-edge projects both at the research labs within the department and in the IITM Research Park (IITMRP), which is India's first university-based research park and home to India's leading deep-tech start-up hub. Our students regularly participate and win national and international competitions for their innovative work. The EE department has set up eleven Centres of Excellence (CoE) to pursue cutting edge R&D in diverse areas within EE.

The B.Tech. (EE) programme is one of the flagship programmes at IIT Madras that prepares students with a solid foundation in EE and enables students to pursue career options in industry and academia with confidence to handle real-world challenges. The B.Tech (EE) curriculum offers flexibility for students to specialise in their areas of interest. Students with good academic performance are given the opportunity to take up the B.Tech. (Honours) and the Dual Degree Options, and to pursue a Minor in diverse inter-disciplinary areas. The students of the EE department have excellent opportunities for job placements and to pursue higher studies. The innovation culture of IITM provides a platform for students to explore the entrepreneurship ecosystem. With highly trained staff and modern infrastructure to support the academic

programmes, the EE department of IITM is globally recognised and is one of the leading comprehensive EE undergraduate programs in India.

For detailed information on faculty expertise, courses offered, research projects, laboratories and infrastructure facilities and EE student activities, please visit <http://www.ee.iitm.ac.in/>.

MECHANICAL ENGINEERING

Four-Year B.Tech. Programme

Mechanical Engineering involves using the principles of Physics in combination with Mathematics to Design, Manufacture and Market an extensive set of products. There is almost no product or service today that does not involve Mechanical Engineering. This ranges from large size systems such as automobiles, satellites, robots, power-plants and aircraft to small systems such as sensors and switches. The degree programme is quite versatile as a student can pursue fundamental concepts and also focus on application-oriented courses across many sub-disciplines.

For detailed information on faculty expertise, courses offered, research programmes, laboratories and infrastructure facilities as well as various department level student activities please

visit <https://mech.iitm.ac.in/meiitm/>

METALLURGICAL AND MATERIALS ENGINEERING

Four-Year B.Tech. Programme

Advances in technology depend on the availability of high performance materials. The field of engineering materials has expanded enormously in the recent past and has encompassed a variety of materials such as ceramics, polymers, electrical and magnetic materials, glasses and composites, along with the traditionally important metals and alloys. Critical selection of such materials for advanced Engineering applications in high technology areas such as space, energy, transport and communications, is of utmost importance.

The B.Tech. programme encompassing metallurgical engineering and materials science/engineering has been designed to train engineering graduates to become highly competent in meeting the emerging needs of the globe in advanced materials and processes as well as in conventional metallurgical engineering. This comprehensive programme allows the student to grasp the fundamentals of metal extraction, processing, characterization and selection

of engineering materials along with basic concepts of modeling. A wide variety of electives are available during the third and fourth years of study to give an opportunity to the student to develop comprehensive understanding in an area of his/her choice

For detailed information on faculty expertise, courses offered, research programme, laboratories and infrastructure facility and various department level student activities please visit
<http://mme.iitm.ac.in/>

NAVAL ARCHITECTURE AND OCEAN ENGINEERING

Four-Year B.Tech. Programme

Naval Architecture deals with the design, construction, repair, maintenance and recycling of all water transport vehicles and systems including ocean going ships and inland vessels/ships. Ocean Engineering is an interdisciplinary field that is concerned with offshore structures and all other aspects of ocean structures for the benefit of mankind without endangering the ecological system. Apart from the advanced training in science and mathematics, well-structured courses in fluid and solid mechanics, wave hydrodynamics, ship hydrodynamics, ship structures, design and analysis of ships, offshore, coastal, port and harbour structures and, ocean energy systems are taught. The programme also imparts elaborate design and experimental skills. The courses in the advanced semesters lay emphasis on numerical modelling and CAD, with electives from many postgraduate courses. Excellent facilities exist for carrying out the final year project work on advanced design, and experimental as well as numerical analysis of ocean engineering systems including marine vehicles.

A wide variety of job opportunities are available to the graduates in companies dealing with offshore engineering, ship building and ship repair, coastal and port engineering, shipping companies, classification societies, statutory bodies, Port Trusts, Coast Guard, the Indian Navy and consulting organizations. Because of the multidisciplinary nature of the programme, a large number of graduates find employment in allied engineering professions and management area also. Graduates can also pursue higher studies in naval architecture, ocean engineering and related disciplines.

For detailed information on faculty expertise, courses offered, research programme, laboratories and infrastructure facility and various department level student activities please visit
<http://www.doe.iitm.ac.in>.

PHYSICS

Four-Year B.Tech. Programme in Engineering Physics:

The Engineering Physics programme at IIT Madras encourages students to learn the fundamental and applied aspects of frontier areas in Physics and Electrical Engineering. In addition to several core courses in Physics, Electrical Engineering and other engineering branches, special topics will be covered by elective courses such as IC Design, Quantum Information and Quantum computing, Materials Technology, Nanotechnology, Communications Engineering and Photonics. The academic curriculum provides excellent academic / laboratory training in Thematic Physics laboratories, Digital Electronics, VLSI, Communication Systems, and experiments based on advanced principles of physics.

These academic programmes will be suitable for those students who intend to pursue higher studies in physics (basic and applied), or would like to take up advanced studies in engineering requiring a good grasp of physical principles or wish to branch out after graduation in industrial research and development programmes. Good employment opportunities for Engineering Physics graduates exist in universities, Industry and in research and development sections of national and international laboratories.

Students in the EP Program have the option of upgrading to a 5-year M.Tech. degree through one of the 9 interdisciplinary dual degree (IDDD) programs offered by the Institute. B.Tech. students with a good academic record can convert to one of these specialised M.Tech. programs at the end of their 5th semester. Three of these IDDD M.Tech. programs are coordinated by the physics department, namely, (i) Advanced Materials and Nanotechnology, (ii) Complex Systems and Dynamics and (iii) Quantum Science and Technology.

Five-Year Dual Degree Programme (BS & MS) in Physics:

The five-year integrated Dual Degree, B.S. and M.S. in Physics, was introduced by IIT Madras in 2009. This special course is designed to impart an exciting curriculum in the foundations and applications of Physics to students who would become distinguished scientists and/or leaders in the academic world or play a lead role in pure and applied research and development in interdisciplinary areas which requires a strong background in Physics. The PH Dual Degree program combines the best aspects of the 4-year Engineering Physics program and the 2-year MSc physics program.

Students will get accelerated exposure to advanced principles and applications in a curriculum that is carefully paced to make physics learning an exciting and fulfilling experience. Some of the advanced electives available for the students this program include Numerical Methods and Programming, High Energy Physics, Nonlinear Dynamics, Quantum Information and Quantum computing, Superconductivity, Gravitation and Cosmology. A strong research component in the final year is a stimulating aspect of this programme.

For detailed information on faculty expertise, courses offered, research programme, laboratories and infrastructure facility and various department level student activities please visit
<https://physics.iitm.ac.in/>

Rules For Change Branch

Branch Change Rules: A limited number of students can change their branch, based on their academic performance in a specific set of courses at the end of first semester.

Upgradation from B.Tech. to Dual Degree (B.Tech. & M.Tech.)

B.Tech. Students who are able to maintain a CGPA of 8 without any backlog at the end of 5th semester are eligible for transfer from four-year B.Tech. to five-year Dual Degree (B.Tech. & M.Tech.) programme in the same department with effect from the 7th semester. In the final year (9th& 10thSemester) the student will have to pay the fees as applicable to M.Tech. Students.

Dual Degree Specialization Stream Allocation

Change of specialization will be considered in Dual Degree Programmes where there are more than one specialization, at the end of 6th semester, (at the end of 4th semester in the case of Dual Degree in Engineering Design), the student should have a minimum CGPA of 8 at the end of 5th semester (3rdsemester in case of Dual Degree in Engineering Design)

Upgradation from B.Tech. – B.Tech. + MS (Entrepreneurship) Programme

At the end of 6thsemester, student with a minimum CGPA of 8.0 or qualify through GATE are eligible for HTA from their 9th semester onwards. The students will be required to complete all the credits required for their B.Tech. programme (Dept. specific), and the B.Tech. project of 9 credits in the form of a Detailed Project Report (DPR) establishing pre-feasibility of the product/process to be developed. 5 courses for MS(E), but on case-by-case basis, General Test Committee (GTC) can decide to waive up to 3 courses, based on performance of the student and the expertise that he/she has acquired. DoMS quarter system-based courses to be counted towards course requirements of MS(E) thesis.

Upgradation from Dual Degree (B.Tech. & M.Tech.) to B.Tech. + MS(Entrepreneurship)

Dual Degree students can convert to B.Tech. + MS(E) programme at the end of their 3rd or 4th year, and will have the same requirements as B.Tech. students converting to B.Tech. + MS(E) programme at the end of their 3rd year. They have to complete the B.Tech. requirement in parent department (except the project) with the project credit being merged with their MS thesis. They will have to take 5 courses for MS(E), as discussed above.

Faculty

IIT Madras has several faculty members with exemplary teaching / research capabilities. Several academic distinctions, honours and awards, fellowships of professional societies, and memberships on editorial boards of journals, have been bestowed on our faculty, in recognition of their academic achievements. SS Bhatnagar award, Padma Bhushan, Padma Shri are some, to mention. A complete account of the details of faculty members and the laurels won by them can be found from our website <http://www.iitm.ac.in>.

In order to encourage excellence in teaching with high quality research, a scheme of awards for young faculty members (less than 40 years of age) is in place. Two awards for faculty in

Engineering Departments and one award in the Departments of Sciences, Humanities & Social Sciences and Management Studies are given annually.

Facilities

Academic Facilities

Central Library

The Central Library <https://cenlib.iitm.ac.in>, a five-story, air-conditioned building, is home to many books and a wide range of journals and periodicals. The library is divided into different sections - Text Book/Reference, General Stacks, Reading Halls, Journals and Current Periodicals, Media Research Centre (for hosting lectures for students), and a Book Bank. The environmentally controlled reading halls, in every floor, with extensive and distributed provision for charging laptops and Wi-Fi facility attracts students till mid-night as a place multiple-activities including general reading, peer-learning in small teams, doing assignments and for the preparation of quiz/exams.

The library subscribes to most of the renowned research journals and databases of engineering, science, and technology including e-subscriptions to a palette of journals. The library has extensive collection of conventional print books, and eBooks from across the publishers. Library also facilitates “inter-library loan” and enables students to access of books/research papers and reference material from other libraries in India. Well trained and proactive library staff help students in accessing the resources of their need.

The library website provides search tool for both hard copy as well as eBook collection, renewal of books, and book procurement request, reservation of books and provides extensive information on research support resources subscribed by IIT Madras. The library is fully automated with provision for self-check-in, check-out, online renewal of books. As a Digital Library, it facilitates students to access a vast number of online resources from anywhere within the campus (hostel room or Classroom) through due authentication. Special provisions are made with publishers for “Remote access” through which students access the library resources from their home. The “Book Bank Section” is periodically updated for catering to the textbook requirement of UG and PG students relating their core and elective courses. The Digital Knowledge Centre (DKC) provides computers for general use by students till mid-night.

Laboratories

In order to fulfil the teaching and research pursuits, IIT Madras has laboratory facilities ranging from the very basic to highly sophisticated ones. The Institute houses many labs with cutting-edge technological resources built in collaboration with industry partners. The central lab facilities include Sophisticated Analytical Instruments Facility (SAIF), Material Science Research Centre (MSRC), and Central Electronics Centre (CEC). A complete list of all the labs under each department is available at the following link <http://www.iitm.ac.in/departments>. You can select a department to view the list of labs it has. Research-oriented students pursuing their B.Tech./ Dual

Degree may work in any of these labs under the guidance of professors and research scholars on projects. Working in these labs will expose the student to the advances in research in that particular field. Alternatively, to get hands-on engineering experience, they can work in the Centre for Innovation (CFI), which is described later in this booklet.

Computer Centre

The Computer Centre at IIT Madras was established in 1973 to provide Centralized Computing resources and support to the Academic initiatives of the Institute. It has professionally maintained facilities, from the IBM system 370 in the 1970s, and the Siemens system in the 1980s, to the SGI and Sun systems in the earlier part of this millennium and the super-computers, communication and network services of today, which have served the IIT Madras community. Over the years, the computing and information technology requirements of IIT Madras community have changed. The Computer Centre's organization has also evolved with these changing requirements. In 2014-2015, the activities of the centre were organized under five verticals: High Performance Computing Environment (HPCE), Networks, E-Services, Data Centre, and Workflow.

High Performance Computing Environment:

The High-Performance Computing Environment (HPCE) group was established to cater to the ever-increasing demand for super-computing facilities from researchers at IIT Madras. A New Cluster has been added in the HPCE called AQUA. It is mainly based on a water cooled system with 280 CPU nodes and 15 GPU nodes and 1PB parallel system, 200TB NAS file system of storage. The following are some active research areas that use the Aqua cluster: aerospace engineering; atmospheric and ocean modeling; analysis of large structures; flows and combustion modeling; material sciences; social, ecological and physical network modeling; numerical weather prediction and data assimilation; molecular modeling; spectroscopy; and VLSI. This machine which caters to the needs of the research community mostly uses parallel programming. The detailed system configuration is as below

Total Compute Power:

- 11680 Cores; 30 GPU Accelerators
- 734 TFlops Rmax (1,106 TFlops Rpeak)

CPU Nodes/GPU Nodes: The CPU nodes are implemented in a HPE Apollo 2000 Gen10 based solution (2U Chassis) with HPE Apollo XL170rGen10 Servers. Each node is configured with: Dual Intel Xeon Gold 6248 20-core, 2.5 GHz processors 192GB, 2 TB SATA disk and Single port Mellanox HDR100 HCA per node. The GPU nodes are implemented in a HPE Apollo 2000 Gen10 based solution (2U Chassis) with HPE Apollo XL190rGen10 Servers. Each node is configured with: Dual Intel Xeon Gold 6142 16-core, 2.6 GHz processors 192GB, 2 TB SATA disk, Single port Mellanox HDR100 HCA and 2 x NVidia V100 32GB GPUs – PCIe per node.

Storage Configuration/Cooling System: 1 PetaByte PFS (HPE Lustre Storage) with minimum 25 GB/s write performance and 200 TB NAS Storage. The Air cooled liquid chiller units fit with multiples of hermetically sealed SCROLL compressor with 4 chiller units 36 TR each, 7 CRV units and 2 PAC units

Network

The campus computer network was established in 1994 connecting about 18 buildings in the academic zone using telephone cables. The initial bandwidth was 64Kbps. Today, using Fiber Backbone high speed network connectivity to all the buildings in the academic zone is operational and the Internet Bandwidth at 10 Gbps. In addition, a backbone interconnecting the three zones - Academic, Hostel and Residential is also operational. The total number of nodes in the campus is approximately 25,000. The network equipment in the academic zone were upgraded to provide 100/1000 Mbps connectivity to the nodes. All the buildings in the academic zone are provided with dual fibre connectivity. GPON (Gigabit Passive Optical Network) has been implemented Residential zone. Facilitation for EDUROAM, Video Conferencing, Online Exams, Web casting of important events are also provided under the network.

E-Services

The E-Services vertical focuses on services such as web system configurations, e-mail, web access, web security, System security, storage solutions, virtualization, HCI (Hyper Converged Infrastructure), web services etc. Several new services were enhanced and added by the e-service group. For more details visit <https://cc.iitm.ac.in/>

Data Centre

The function of the Data Centre is to ensure the appropriate facility management for efficient functioning of all verticals of the computer centre and Department servers. These facilities include uninterrupted power supply, backup power supply (DG Set), CCTV, climate control, access control, water leakage system, VESDA, PA system, fire protection and office space maintenance.

Workflow:

The implementation of Enterprise Resource Planning (ERP) software, or what is internally referred to as a Workflow, has expanded its services in different sections of Academics, Administration, Accounts, ICSR, Stores and Purchase.

Workflow group at the Computer Centre works with various sections in the institute to support system usage, capture change requirements, involvement in process development activities, maintaining reporting websites that collects data from workflow and generating reports using new software tools. The workflow team works with users from different sections to re-engineer selected processes to streamline operations. Reports from workflow have been widely used in administration, accounts and academics to easily manage the day-to-day operations. Workflow submissions that were enforced in few processes such as Leave, LTC, faculty visits, festival advance, children education allowance, purchase order creation, imprest claim, SRB, student

course registrations, student travel approval, student worklog approvals, grade approvals etc in the previous financial year are successfully running. Based on the user feedback, change requests are raised to implement few modifications in these processes as well.

In the financial year 2014-2015, the data extracted from workflow has been analyzed and utilized by ISO internal audit team to improve the performance of administrative staff and better align our internal processes to support our vision for IIT-Madras.

Central Skill Training & Fabrication Facility (CSTF)

The workshop is an educational platform where science and technology intersect. The process of modernizing the workshop training is done in line with industry to suit industrial requirements is complete. The Central workshop is one of the support services of the Institute that enhances the academic process of B.Tech. and M.Tech. students M.S and PhD. Research Scholars.

The Central workshop facilities are utilized to impart practical skills for the students in major fields of engineering and technology. Experimental set ups are routinely fabricated in this facility with the utmost quality within the stipulated time to support research projects and teaching lab requirements of the Institute.

Residential Facilities

Hostels

There are currently 21 hostels out of which six are female hostels. All hostels are named after the prominent rivers of India.

In view of the unique and ecologically diverse nature of IITM campus, the students are not allowed to drive powered vehicles in the campus. They can use bicycles only or walk. The institute operates buses and vans from the main gate to different locations of the campus and also around the Hostel and Institute Zone at frequent intervals for easy travel.

Most hostels have a capacity of about 350 to 400 rooms. The first year undergraduate Students are accommodated in a separate hostel following a Supreme Court order related to ragging.

Internet and Local Area Network (LAN) facility is provided in every room and there is an activity room in all hostels as well. Students will also be given an email account on the institute server and it will generally read rollnumber@smail.iitm.ac.in.

Students can borrow novels and other reading material from the hostel library. Most hostels also have a garden. Every hostel has facilities for sports with all the equipment and gear. Every hostel has a Music room and a tech-room. Washing Machines are provided in all the hostels. Students can also avail the laundry facility in the campus. There is a room with television known as the 'common room' where most of the hostel gatherings take place. Students celebrate many festivals like Holi, Diwali, and Pongal etc. The Hostel Night and Ice-Cream Night are two other occasions when the entire hostel meets.

Each hostel has a Warden, who is a faculty member, and a resident Assistant Warden. The Warden and Asst. Warden, with the help of the office staff, handle all administrative work

concerning the hostel. The Hostel Council consisting of the warden and a number of student secretaries, elected by the residents of each hostel, decides issues pertaining the hostel.

Open Air Theatre (OAT)

In between the Gajendra Circle (GC) and the hostel zone, you will spot a large arena called the OAT (Open Air Theatre), where the weekend movies are screened by the Film Club. The best of the latest movies in English, Hindi and regional languages are screened. Movies in other languages are also screened by the cultural associations. OAT is the venue where the Saarang Proshows are held. The capacity of this place is about 7000 and it looks splendid when it gets lit up during shows for Saarang.

Student Facilities Centre

There are many locations in the hostel zone in which general student facilities to cater to the needs of the students. The Students Facilities Centre (SFC) housing the Patisserie cum coffee shop, general store, gift shop, juice shop, saloon, travel agency, printing and photocopying, and ATM is a popular location for students. This is a great place to spend your evenings as it is also a place for people to chat with their friends. Apart from this, there are facilities located near the Female hostels, Quark where a restaurant is opened on the ground floor with a first floor for use for cultural/Co-curricular activities. The Himalaya Food Court (HFC) is another place students frequently to chat and satiate their taste buds.

Food

Institute has three big dining facilities namely Himalaya, Vindhya and Nilgiri. We have a multitude of caterers operating the Himalaya dining facility, with a choice North Indian and South Indian vegetarian and non-vegetarian cuisines. Students get to choose the caterer and the cuisine for a given mess period (30-45 days) on a first- come-first-served basis. A two story sprawling food court (Food-For-Thought, FFT) is available in the Academic zone which provides a wide range of choices.

Bank Facilities

State Bank of India has a branch just down the road from the GC. Canara Bank has a branch in the Shopping Centre. The Institute has two State Bank of India ATMs – one at the Bank and the other at the Taramani Guest house located and two Canara Bank ATMs: one at the shopping centre and another opposite to Narmada Hostel. The SBI ATMs can be used to make all payments to the institute. There is also an ICICI bank ATM in the Office of Hostel Management (CCW Office).

Student Life at Institute

Institute Hospital

Institute hospital has the facilities to take care of general health problems faced by the students. The Institute hospital runs round the clock service. The hospital is located at the centre of Hostel, Institute and residential zone. Apart from the regular doctors, there are a set of visiting specialists including a general surgeon, ENT surgeon, ophthalmologist, orthopedist, cardiologist and psychiatrist. Well-equipped laboratories for all tests, X-Rays, and inpatient ward are also present. Ambulance facility is also available. Kauvery hospital runs the pharmacy in our hospital. All students are covered under medical insurance scheme with a premium of Rs.1800/- and an additional amount of Rs.700/- per semester as medical fee.

MiTR

MiTR is a body comprising faculty and senior students. The objective _of MiTR is to counsel students to cope overwhelming emotional disturbances they face, such as curriculum-related, or otherwise. Trained MITR members offer emotional and other forms of support to students according to their needs. The moto of MITR is '*No one in the campus should be unattended in their emotional distress*'.

MiTR student volunteers will be your first friends on campus. For anything you may need, just contact MiTR team and they will always be there to help you. Contact details of MiTR team is available online (wellnessiitm.com). The responsibilities of MiTR also includes helping out students who find it difficult to cope with the academic load with connecting to tutors who will do the needful. Look out for interesting talks and workshops by people from various parts of the institute, arranged by MiTR, to facilitate acquaintance with them so that students can contact the right person(s) freely as and when necessary. MiTR is not just limited to first year students; MiTR associates are also actively involved in counselling or offering any kind of help to the students even in the higher semesters. You can reach MiTR at any time for any kind of difficulties and they will solve them just the way your friend would.

SAATHI

SAATHI is a proactive platform for self-growth and well-being of the students. The SAATHI team focuses on proactive measures that raise awareness in the campus about various pertinent

issues and plan several informal gatherings, lectures, and sessions, open to all. They also provide guidance to the students on various academic and extra-curricular activities on campus, expose them to various life skills. When a new student joins the institute, he/she needs a lot of information and orientation to adjust to the new place. SAATHI plays a key role in making the transition from a new student to an IITian viz. the process of instilling a sense of pride and confidence in oneself, an essential to do anything to the expected level at IIT. Contact details of SAATHI team is available online (wellnessiitm.com).

Counselling Services (Wellness Centre)

To help students who require counselling, expert/professional counsellors are engaged by the Institute and are available in a counselling room located in the Central Library/Dost Office/Hostel Zone. They are also available 24x7 through telephone/online. Apart from this, the Institute hospital has 2 specialists Psychiatrist who take care of students who seek their help or who are referred by MiTR or faculty advisors. Contact details of Wellness Centre team is available online (wellnessiitm.com).

Liaison Officer

Special support is provided for the needy students. The Liaison Officer for weaker section provides the required nurturing wherever required and tutoring by senior students is provided. SC/ST Students are benefited significantly through the help provided at the different stages.

Students with Physical Disability

For the benefits of PwD (Persons with Disability) students, all the buildings are installed with elevators (braille assisted) and ramps to facilitate access students with physical disability, and are assigned specially designed hostel rooms with attached bathroom in ground floor. The Advisor (Weaker Section) takes care of academic and general well-being of these students. Dean (Academic Courses), Advisor (Inclusive Education) and Dean (Students) meet with each of these students periodically to understand the special attention/requirements on a case to case basis, additional requirements like large font question paper, extra time during examinations, suitable requirement/assistance in conduct of laboratory experiments, flexible curriculum requirements are provided.

Faculty Advisor/HOD/Deans

To help the students in planning their courses of study and for getting general advice on the academic programme, the concerned Department will assign 10 students to a Faculty member who will be called their Faculty Adviser. The students should always feel free approach any faculty member in the department. The head of the department and Dean (Academic Courses) are always available for any help required by the students. Parents are always encouraged/requested to stay connect with the faculty advisor. In case of any concerns, students and their parents can always meet with Dean (Academic Courses) and Dean (Students).

Financial Assistance

IIT Madras offers many scholarships which are based on financial situation of the student or academic performance of the student. There are also scholarships which are based on both financial condition and academic performance of student.

For more details

<https://www.iitm.ac.in/academics/academic-services/scholarships-and-financial-assistance>

Scholarships for SC/ST students

Scholarship	Eligibility/Condition	Benefits of scholarship
Institute SC/ST Scholarships	For B.Tech. /DD, Annual income of parents should not be more than Rs.4.5 lakhs	<ul style="list-style-type: none"> · Free messing (basic menu only) · Pocket allowance of Rs.250 p.m. and exemption of hostel seat rent. (Tuition fee is exempted for all SC/ST students). · Renewal of scholarship in the subsequent years is subject to maintaining 5.0 CGPA (minimum).
Ministry of Social Justice and Empowerment, Govt. Central Sector Scholarships	Based on JEE (Adv.) rank and total family annual income should not exceed Rs.8 lakhs.	<ul style="list-style-type: none"> · Personal PC Rs.45000/- (one time); Living Expenses Rs.2220 per month; Books and Stationery Rs.3000 per annum; · Reimbursement of Institute fees. · Renewal of scholarship in the subsequent years is subject to satisfactory

p For SC students	<p>performance. (5.0 CGPA).</p> <ul style="list-style-type: none"> · Ministry of Social Justice and Empowerment modifies the guidelines every year. · NSP PORTAL <p>https://scholarships.gov.in/</p>
Ministry of Tribal Affairs, Govt. of India Central Sector Scheme for Scholarships for SC Students	<p>Annual income of parents should not be more than Rs.6 lakhs</p> <ul style="list-style-type: none"> · Personal PC Rs.45000/- (one time); Living Expenses Rs.2200 per month; Books and Stationery Rs.3000/- per annum; · Reimbursement of Institute fees. · Renewal of scholarship in the subsequent years is subject to satisfactory performance. (5.0 CGPA). · NSP PORTAL <p>https://scholarships.gov.in/</p>

Engineers India limited Scholarships for SC/ST students	SC student s and ST student s of Civil, Mecha nical, Electric al, Computer Scienc e and Chemi cal Engineering department.	<ul style="list-style-type: none"> · EIL will send intimation every year. · Student have to submit application based on the instructions given by EIL · 	
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Scholarship for General category including EWS and OBC

Institute Sports Scholarships	B.Tech., DD, MA progra mme Achievement in any of sports activitie s at the Nation al, State and District Level	<ul style="list-style-type: none"> · Academic Fee Waiver · Minimum CGPA of 7 in preceding year. 	
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Scholarships for General category including EWS and OBC with parental income below 4.5 Lakhs per Annum

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Scholarships for 1st Year B.Tech./ Dual Degree students

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Industry Funded Scholarships for 1st year B.Tech./DD students:

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Scholarships for 4thyear B.Tech./D.D students:

Following merit based scholarships are available for 4thyear B.Tech./D.D students:

1. B Jayant Baliga Scholarship
2. OPJEMS scholarship

Half Time Teaching Assistantship (HTTA)

The final year Dual Degree students are eligible for HTTA of Rs.12,400/ p.m. Student those who secure CGPA of 8.0 and earned minimum credits specified by the senate at the end of 8th semester or “Having valid GATE score and earned minimum credit specified by the senate at the end of 8th semester”.

Students' Welfare Fund

Students welfare fund has been established to provide financial assistance for various welfare schemes and measures for the needy students such as aid for physically handicapped, accident or sudden illness related expenses that are not otherwise met by the regular medical insurance, and loan to individual students to meet expenses related to travel and other expenses when they have to go on a study abroad schemes,

Student's Distress Fund Supported by Alumni

IITM Alumni have created a corpus to provide help to deserving students who have been identified to be under financial distress due to any reason such as loss of bread-winner in the family. Such requests are considered by the Dean (IAR/Students) and approve the required financial support every semester.

Educational Loan by Campus Nationalized Bank

Along with the letter of admission, a certified statement of total educational expenses (including boarding & lodging) is sent for all students. This will help the student to avail bank loan from any of the banks in their place of residence. All students offered admission to IIT Madras are provided along with the admission letter, a welcome kit by a SBI offering (i) Zero balance SB account; (ii) Online Transaction Facility; (iii) Debit card; (iv) Pre-approved bank loan which will cover entire 4/5 years expenses.

Alumni Funded Interest Free Loan (SSAN ANANYA IITM Educational Trust)

An alumnus, Mr. Sunderam Swaminathan, has created “SSAN ANANYA IITM EDUCATIONAL TRUST” to provide financial assistance in the form of interest free loan to B.Tech./Dual Degree students at IIT Madras for the purpose of covering tuition fees and living expenses. He has committed to support 5 students from the first academic year 2014-15 at Rs. 1.2 lakhs each, and add 5 students every year for the next 3-4 years. His vision is to see this scheme supports at least 100 students within 12-18 years and start growing exponentially further. He intends to achieve this by having beneficiaries pay back into the programme directly within about 5 years after they start earning. The candidates should realize that this Trust is started purely with a vision to make the Trust large enough to ensure no candidate is deprived of education in IITM due to financial reasons. This means that its success solely depends on these candidates giving back the amount within, say, 5 years (this will be about Rs. 10,000 / month which is very reasonable) once they start earning. No interest will be applicable. They can even contribute more, if they wish.

Medical Insurance Coverage for all students

All students are covered under a medical Insurance scheme exclusively designed for students. Annual premium is paid by the student. All minor ailments are attended to by the Institute hospital.

Travel Support by Alumni

The IITM alumni funded IITMAANA Travel Grant programme is designed to assist IITM students, faculty and staff to visit USA and other countries abroad and present their papers at internationally recognized technical conferences. Participation in summits, workshops, competitions and internship and semester exchange programmes may also be funded through this Programme. The main objectives are to help IITM students, faculty and staff participate in International events in the U.S. and other countries, promote the ‘IIT Madras’ brand at these venues, promote Research and Development in Technical Education by providing an opportunity to deserving students to interact with peers and experts at International level and support personal and professional development among IITians by facilitating participation in foreign internships, workshops, competitions, and summits. For more details log in to <http://alumni.iitm.ac.in/>

PRIZES & RECOGNITION

No competent and deserving candidate goes unrecognized at IIT Madras! They win prizes for achievements ranging from commendable academic performance to those excelling in extra-curricular, cultural, co-curricular, sports activities. Annual sports /Cultural prizes are tied to representing to podium finishes (medallist) at the official District/State/National level tournament or representation of the state at nationals. The highest honour is the President's Gold Medal followed by the Governor's Medal. All round meritorious performances by students earn them the prestigious 'Institute Blues' award.

Training & Placement

The Placement Office is involved in securing placements for students graduating from the institute. The office maintains a close liaison with various industrial establishments (both private discussions, placement tests and interviews. Nearly 300 companies visit the campus every year for holding campus interviews. To give students an exposure to the application of technology in the industry and hands-on work experience, the institute mandates that students do an internship in a company in India engaged in core industrial activity for a minimum duration of six weeks, over the summer following third year. This internship is included in the curriculum and carries credits. The Institute has a dedicated Internship office with a Faculty-in-charge to coordinate Internship related activities. Companies such as Google, Microsoft, GE, Schlumberger, ITC, Airbus, Shell Technology, Texas Instruments, Eaton, Robert Bosch, NVidia, to name a few, visited IITM for internships as well as campus placements last year. The students of IITM are placed in various sectors, namely, Core Engineering, Software/IT, FMCG, Finance/Consulting and R&D. Since the recruitment scenario is constantly changing across the globe, it is essential that students acquire a range of skills in order to make them employable in this changing scenario. To this end, students are guided about their career choices not only in their final year but all through their study at IITM starting right from their first year. A new early career development programme has been setup for this purpose. This is staffed by trained professionals with able guidance from the faculty and alumni of the institute.

Industry And Alumni Relations

Office of Global Engagement:

Internationalization is inherent to the mission of IIT Madras, and the Office of Global Engagement is committed to this mission through a focused approach in an increasingly complex and challenging time for the higher education sector.

IIT Madras offers many opportunities for students to spend time at Universities abroad. Course-based exchange programs and research-based internships are available through more than 280 MoUs and Student Exchange Agreements established with the best academic institutions worldwide. Students will have a chance to take credit courses taught by some of the best practitioners in the field. IIT Madras students are armed with the benefits of a culturally diverse experience which empowers them to transcend social and economic boundaries and truly become world citizens. We strive to provide innovatively taught courses unhindered by

geography to meet this need. IITM has 19 Joint Doctoral, 7 Supervision, and 2 Masters programs with globally renowned partner universities. Student exchange opportunities span a wide range of programs that include courses, projects, and research. Our exclusive internship program, GRIESHMA, which is available in the online and physical format, offers students the unique opportunity of interacting with experienced IITM faculty while working in a research-intensive atmosphere focused on individual learning.

Students benefit through interactions with peers and faculty to gain new insights and perspectives. A thriving global community of students and visiting international faculty on campus imparts an international character to teaching and research on campus.

For more information, Please visit: <https://ge.iitm.ac.in/>

Alumni & Corporate Relations Office

The primary mission of A & CR office is to serve as the outward - facing window from the institute to the alumni and drive institute - related fund-raising activities among alumni and to use the experience of the Alumni to help students to achieve their dreams.

We represent about 50,000 plus IITM alumni in various chapters spread across the globe, joining hands to make IIT Madras a world- class institution.

The Alumni & Corporate Relations Mission Statement is as follows:

- Serve as an outward-facing window from the Institute to the Alumni
- Drive Institute-related fund-raising activities among Alumni
- Register graduating students into the Alumni database
- Serve the student community
- Serve the faculty community
- Serve the Alumni community

For more information please visit: <https://acr.iitm.ac.in/>

Recreational/Extra Curricular activities

IITM is a vibrant campus with a lot of opportunities for students to get involved in co-curricular and extracurricular activities. There are as many as 40 different co-curricular and cultural clubs that keep our 9000+ students intellectually and socially engaged. These pave the way for

students to develop their talent, passion and skills and also to showcase their abilities. Many explore new dimensions of their interests to discover their passion.

Many competitions and festivals are held. The prominent ones are the technical festival named Shaastra, the cultural festival named Saarang, and the entrepreneurship related assemblage named E-Summit. There are other festivals, such as Shaastra-Juniors, and many smaller versions of festivals conducted by the clubs on campus such as Quiz Fest, (Lit-Fest), etc. Apart from these, some departments also conduct special festivals at different times in the year. Some of the prominent ones are CEA Fest, Exebit, Biofest, Amalgam, Forays, Wavez, Mechanica, Samanvay, and Chemclave.

Descriptions of some of these activities and facilities are provided below:

Centre for Innovation (CFI)

Envisioned to promote student invention and innovation, with a focus on technology environment, this 'student lab' at IIT-Madras was set up with funds donated by the Alumni batch of 1981. It makes a positive impact to the environment and society with its contributions. This lab serves as an intellectual environment to provide facilities to the students to work on hands-on engineering activities. This lab supplements the engineering learnt in class with another important component of engineering: Innovation and Creativity.

Since its inception, CFI has played a major role in fostering student interest in technical activities, through various projects that it has funded and supported. A few of them are even being patented, depending upon the social and economic impacts of the project. CFI has also been associated with several major, long-term projects and competitions such as Robocon and Formula-SAE.

Lit Soc activities

Lit Soc is a yearlong inter-hostel battle royale. All the hostels go head to head over the course of the academic year and battle it out with each other trying to win different competitions in an effort to get the necessary points to take the Lit Soc cup home at the end of the year and be crowned champions. The various events have different points and special points are awarded to enthusiastic and talented freshers! Freshie events are also be held towards the beginning of the odd semester to initiate them into Lit Soc and give them a feel of how intense and enjoyable Lit Soc events can be. It is a matter of great pride for a hostel to win Lit Soc and as a resident of your hostel, it will be up to you to help your hostel win it.

Tech Soc activities

Very simply put, Tech-Soc was born as a tournament where hostels could compete against each other in all tech-related events for points, power and fame. Tech-Soc was started in 2005 and has since then grown steadily, adding events to its repertoire every year. Together with Schroeter and Lit-Soc, it forms the set of three independent "Big" trophies that hostels compete for every year. Tech-Soc is being re-envisioned as forum with a much wider reach than just inter-hostel events. It has now become the umbrella under which all tech-related student initiatives will be encouraged and nurtured. In the odd semester, various informal sessions like "Fundae" sessions and Tech interaction sessions will also be organized so that the first year students can learn about the tech world they are about to step into. Apart from these, there are various clubs related to the technical activities which one can join. For the tech-savvy we always have something or

the other going on. You get to dirty your hands and build stuff on your own or participate in tech quizzes or watch the spectacle as different hostels battle it out in Tech-Soc.

C-TIDES

The Cell for Technology Innovation, Development and Entrepreneurship Support (C-TIDES) acts as a platform that bridges the gap between established entrepreneurs and aspiring students of IIT Madras. In order to foster and encourage this spirit of entrepreneurship, C-TIDES was established in 1998. The cell provides budding entrepreneurs with a platform to support them, thereby helping them realize their ideas and converting them to reality. Events and workshops are conducted all-round the year emphasizing at least one of the many aspects of entrepreneurship. So if you are a person who is constantly dreaming and striving to get the best out of the things around you and looking for places where you can make a difference, you are similar to a class of people opting for their own ventures in their careers and becoming entrepreneurs.

C-TIDES is something in between being a Student Club and an institute body. Though primarily a student-managed cell, it is mentored by professors, renowned entrepreneurs, and alumni. C-TIDES also organizes Breakthrough, a technical Business Plan competition, as well as Genesis, which is one of the largest Social Entrepreneurial competitions in the whole world.

Techno Entrepreneurial Social Initiatives

IIT-Madras is well known for the diversity in the range of activities that its students and the administration take up. The Institute aims not only at the academic development of its students, but also their overall development. IITM is actively involved in several initiatives which help its students put their technical knowledge to practical use, encourages them to hone their interests, and also target at making a difference to the Society and Environment.

STUDENT CLUBS

A large number of student-managed clubs are active in the institute. It is strongly encouraged that the students actively take part in at least a few of them. They play a key role in the all-round development as well as honing skill-sets. Further, no prior knowledge is required in many of these clubs. A keen interest and enthusiasm is all that is necessary to participate and excel. These clubs act as pathways in developing hobbies to a higher level.

Astronomy Club

Enthusiastic about astronomy, gazing and studying stars? Then this is a must visit club for you, even if you don't have any prior knowledge of the subject. Theory sessions are organized, where interesting observations in astronomy and astrophysics are discussed. There are members having astrophotography equipment. Even a novice can learn a lot from these sessions. Members of this club watch out for planets, open clusters, globular clusters, and galaxies.

Data Analytics Club

The Analytics Club helps students acquire the skills required to extract meaning from data, which can be put to use doing live projects with real-world data in partnership with companies in the field of analytics.

Linux Users Group

Also known as LUG, it is a club which provides support and education for Linux users (particularly inexperienced users). It also helps in promoting the use of open source software. Those with an interest in developing stuff need not worry. There are a few very good developers in the group. Lectures and workshops are conducted regularly for the members.

Design Club

The Design Club of IIT Madras is a great way to immerse yourself into the graphic design community. We intend to inspire you to become active and creative. You can meet other designers, present and share ideas, ask questions, talk about the latest design news, ask for feedback about your work and much more. Being active in a design community is also a great way to promote your own work and get your name out there. Above all it is also a learning platform for all the budding Graphic Designers. Anybody can become a collaborator of the Design Club by contributing designs and ideas by means of Blog posts, Facebook posts etc.

Music Club

If you are a music lover, then this is the ideal place for you. This is a club specially formed for promoting music in the institute. For the past 30 years, it has been responsible for bringing famous musicians to the Institute. It is actively engaging music enthusiasts with concerts almost every month. A series called ClassFest is also organized during which leading musicians perform in the Institute.

Adventure Club

"Adventure is not outside man. It is within." It is with the sole purpose of exploring this adventurous side of students that three adventure enthusiasts started the club in 2011. The activities of the Club include trekking and cycling. Treks to Nagala, Tada, Talakona, Yercaud are organized by our organizers on a fortnightly basis. Cycling to Mahabalipuram, Kovalam beach and Elliots beach are organized on a monthly basis. Started in February last year, the club has already made 3 trips: 2 Trekking trips to the famous Nagala hills and 1 cycling trip to Kovalam. The club has also nurtured sister clubs in other colleges like NIFT, thus helping in socializing with other college students for greater exposure to the outside world. IAC gives you a great platform to interact with like-minded people who love adventure. Also, IAC seeks to help you out with ways and means to explore the unexplored and dare the daring! After all, "It is only in adventure that some people succeed in knowing themselves".

Quiz Club

Quizzing has always been a popular pastime on IITM campus. Consisting of a bunch of people united by a common passion, the IITM Quiz Club conducts several quizzes throughout the academic year. Quizzes are conducted on a wide spectrum of topics, ranging from sports and entertainment to science and technology. The quizzes at Saarang and Shaastra (as well as LitSoc and TechSoc) are also organized by QC members. Whether you've quizzed before or are new to quizzing, this is a great way to meet people and have a lot of fun!

Word Games Club

Interested in quirky word origins, bamboozling anagrams and cryptic crosswords? If you love scrabbling, solving word puzzles and other teaser word games; any friend of the English language is a friend of yours; if the polymorphous intricacies of language enthrall you – then this is your “Mecca”. Their primary activities are Scrabble, Cryptic Crosswords and WTGW (What’s the Good Word?) with a lot of other random word puzzles. The club meets every fortnight or so for WGC activities. They organize an Institute Scrabble tourney, a national Scrabble tourney and Crossie Open in addition to various activities for both Saarang and LitSoc.

IViL

A completely student-run initiative, IIT for Villages (IViL) has been a life-changing experience for many. Whether it is helping women self-help groups or working towards rural sensitivity amongst urban students, IViLians have no boundaries restricting the scope of their work. With members across all batches and courses, the only prerequisite to joining the group is a desire and willingness to get down on the ground and understand grass root level reality. Whether it is the Integrated Knowledge Centre that IViL helped set up or cottage industries that it helps promote, IViL helps you make a difference in the lives of those around us, and grow in the process. Being an IViLian is known to help in more ways than one – seeing the India most IITians don’t, sharing life-changing experiences and having stories to tell, learning to be proactive and always spreading the joy!

Prakriti

This is a group of environmentally conscious people, which mainly works towards making young students aware of environmental issues on our campus, our country and on planet earth. It also strives to preserve and improve the ecology of the IIT campus. In addition, the forum strives to create awareness among the campus residents in preserving the endangered species that inhabit our campus.

Oratory Club

The perfect place for all the literature enthusiasts: this is the longest running literary club in the institute. As a completely student-managed club, it has helped a lot of students overcome their public speaking inhibitions and improve their oratory skills. Its informal nature has attracted all kinds of students. It creates an ideal platform wherein all the people can participate and learn a lot from each other. This club organizes JAM sessions, extempore, and a host of other activities. Spending time with this club guarantees to make you an orator and probably a good one at that!

Colloquium

The Colloquium is an informal student discussion forum that conducts open discussions on various current affairs and topics of social relevance. The forum seeks active engagement from its participants and promotes debate and exchange of ideas through weekly discussions. The forum maintains an active online presence in the form of a Facebook page which serves as a hub for sharing interesting thoughts and articles as well as initiating and scheduling discussions.

The Harvard US-India Initiative

The Harvard US-India Initiative or the UII, as it is called, is a new addition to the numerous student clubs that exist on campus. The UII seeks to foster interactions and long term cooperation between youth from the United States and India and to leverage these relationships

to address socially relevant issues. The UII, has in its short span of existence, achieved significant results and we hope that the IIT Madras chapter will follow the trend.

The Fifth Estate

The Fourth Estate is defined in a dictionary as ‘the press, including journalists, newspaper writers, and photographers’. As IIT Madras’ official magazine and news body, we are all this and more! We cover events and news in the campus and also publish op-eds, editorials, interviews and investigative pieces. Apart from this, we bring out several photo-series and other popular features, such as Humans of Insti. Usually, we have something to say about everything that happens on campus, and never fail to bring our 11,000 strong following the latest on campus buzz. Finally, we also function as a forum where campus inhabitants’ can voice their opinions on institute events.

Chennai36

Once at IITM, always at IITM! We never forget our alumni and constantly have them interviewed by correspondents on this blog. Alumni talk about their lives after their wonderful and enriching campus life and how they have strived to keep up the name of their alma mater. The Alumni Association has also started the ‘I Love Insti’ video series that captures every aspect of our beautiful campus life and culture.

Reflections

Perception. Introspection. Retrospection... Reflection. The transformation every human goes through: and to keep the spirit alive, up and fighting, Reflections was born. Reflections works towards bringing out various unexplored horizons that lie within and lead to better living. We are a team of people who, in our own way, are trying to help keep the spirits up and alive. Reflections conducts programmes to encourage discussions on issues pertaining to everyday life which have a far deeper impact than normally perceived. It brings out the “Reflections” magazine, which contains articles from alumni, professors and students. Many writers from outside the campus have been actively contributing every year. It provides a platform for expression to everyone. Talks, diverse topics, by speakers ranging from the fields of engineering to science to psychology are conducted, which encourage thinking and help in understanding things which we normally neglect in our day to day lives. Panel discussions are held to question, share, contradict and explain, and movies screened to touch, teach and inspire.

EMLs (Extra Mural Lectures)

As children, we admire; as adolescents, we aspire; as adults we perspire; and as responsible, successful citizens, we inspire. It is this inspiration that one gets in these lectures. One cannot achieve big without listening to people who have done it before. It is as they say; we shall not live long enough to learn from our own mistakes. We shall have to learn from others’ too. The Extra Mural Lectures in IITM cover diverse topics, and bring in people from across the globe; those people, who have been pioneers and who have received the highest honours in their fields. Where else do you get to interact with people so knowledgeable, so experienced and so successful? The faces that you came closest to on television screens or online, are now brought before you to dispense their wisdom in person! These lectures unfold tales of unfathomable perspiration and unmatched genius. It is said that we cannot discover new continents with the

fear of losing sight of the shore. We provide you with the tales of these conquests and much more..._

The Open Forum

It is an ambitious plan to get students closer to professors and the topics of research undertaken by them. It is often characteristic of research that progress happens in steps and not in continuity. Be it the professors or their doctoral students, many a times they find themselves stuck at a stage which ranges from a conceptual hurdle to a tough mathematical equation to solve. Our proposal shall have these students/professors put these problems they face out on an open forum such that it could be tackled by any student at IITM.

Nirmaan

Nirmaan at IIT-Madras is the nursery of start-up dreams among our students and faculty. Set up in 2015 to enable creative projects to explore business potential, Nirmaan helps committed teams validate their ideas, approach to market leading to establishment of a start-up company. Nirmaan act as a pre-incubator, and the students/scholars at IIT-M comes with various ideas and works towards incubating ideas and also approaches the Incubation Cell (IC) at IITM-Research Park. Nirmaan provides mentoring, pre-seed funding, workspace and arranges training workshops for pre-incubators.

Please visit <https://nirmaan.iitm.ac.in/> for further details.

Leisure Time Activities Programme (LTAP)

This newly formed programme offers activities related to learning various skills in a structured manner. These activities promote a student's personal development, independence and confidence apart from social skills. Offerings include leisure time courses such as, Introduction to Meditation, Psychology in Everyday Life, Beginner Painting, Appreciating Music, Appreciating Cinema, Blogging, Introduction to Writing, Robotics for Fun, Computer Generated Art, Coding in Java, Android programming, Unmanned Aerial Vehicles, Discovering India, English Speaking Skills, Mythology, Learn "language", Learn Cooking, etc. The activities in the programme are planned, supervised, facilitated and guided by a leisure time activities coordinator.

Please visit <https://dost.iitm.ac.in/iitmdost/pages/l-tap> for details concerning L-TAP courses.

REGIONAL CLUBS

IIT Madras also hosts a large number of regional clubs, including but not limited to the Telugu Samskruta Samiti, Kerala Kala Samiti, Marathi Mitra Mandal, Hindi Mitra Mandal, Kannada Sangha and SADINER (Student Association for the Socio-Economic Development of India's North Eastern regions). These clubs host various cultural and social events throughout the year which provide a platform for students to share and revel in their respective cultures and make acquaintances and friends among the student body, staff and faculty. These events can involve lectures, music and dance performances, dinners, competitions and other kinds of performances and events.

CULTURAL AND TECHNICAL FESTIVALS

Shaastra

Shaastra is the annual technical festival of IIT Madras. True to its name, Shaastra (signifying 'science') is a celebration of science and technology; a confluence of minds and a melting pot of diverse disciplines. It provides a chance to unleash the engineer and scientist within us, providing glimpses of the elegance and scope of evolving technology.

Shaastra has so far seen 15 editions, having started in its current avatar in the year 2000. It is scheduled to be held over four days and four nights during the first week of January. Shaastra is a veritable engineer's paradise where fervent enthusiasts congregate, compete, learn and enjoy. Intense competitions, spectacular demonstrations, world-class lectures and a variety of informative workshops are just the tip of the iceberg. Shaastra attracts an immense number of participants from diverse technical, scientific and managerial backgrounds ranging from college students to graduates, from academicians to professionals, from design engineers to managers. The fest holds the distinction of being the first student managed event in the world to implement a Quality Management System and earn ISO 9001:2008 certification by TUV. This has been done to ensure that the standards of the festival are maintained at the highest level and assure our sponsors a consistent degree of exposure at Shaastra.

This is the platform to showcase our knowledge and enthusiasm. Shaastra is our way of celebrating our love for the spirit of engineering. And in the process we plan to give our visitors a show they will never forget. Shaastra has always been a phenomenal learning experience for the organizers and the participants alike. So at the end of the day we go back feeling much wiser and happier. Of course, if you are not a hard-core techie, don't worry! We've got you covered too. Just walk in for a pleasant surprise. Shaastra nights are the icing on the cake. Laser shows, fireworks displays and so much more each year, proving that you don't always need the know-how to appreciate what science can do. This is just a glimpse of the sort of stuff we have in Shaastra every year. How much more you uncover is entirely up to you. So welcome, make yourselves at home, and remember - don't be shy when it comes to revealing the engineer in you.

Saarang

IIT Madras has seen a glorious 56 year journey, punctuated by many milestones – one of which was the advent of Mardi Gras, a pioneer student cultural extravaganza. Mardi Gras has the distinction of having hosted Uriah Heep, in one of their rare world tours, Buddha's Babies and even A R Rahman as a college student. Almost forty years later, the legacy lives on, albeit in a new avatar as Saarang.

Saarang has always made heads turn. It is one of the largest cultural festivals in India attracting over 50,000 people from around the country. Held in the month of January every year, Saarang is commonly acknowledged as the mother of all cultural festivals, a reputation that we at IITM are honour-bound to uphold!

This five-day festival is the traditional meeting place for the young and those young at heart. Saarang is characterized by days jam-packed with enough events and competitions to make your head and your heart do cartwheels. Be it the theatre arts, musical displays such as Decibels or the laugh out loud wackiness of extempore and Just-A-Minute, Saarang always has the crowds screaming for more.

The mainstay at Saarang has always been the 4 Professional Shows, with past editions having seen performances by prominent classical artists such as Balamurali Krishna, Ustad Bismillah Khan, Pandit Hariprasad Chaurasia; international acts such as Opeth and Skidrow; as well as light music shows by Shaan, S.P. Balasubramaniam, Shankar Ehsaan Loy, Karthik, KK, Benny Dayal, Lucky Ali, Udit Narayan and Sonu Nigam.

Be it the acoustics, sound Systems, stage or seating capacity, Saarang promises a memorable experience for everyone. A large fraction of the student community works around the clock for months to ensure a better Saarang each time around. Cherishing the support of a bevy of sponsors throughout previous years, Saarang has always managed to strike a chord with the people who flock to see it all happen.

On the events front, we cater to all genres. We have quizzes on all topics. We also have other exciting events like WTGW, Picto and Tinto blend into Pot Pourri along with DumbCs, painting and modelling apart from theatre, speaking events, creative writing, music and so on. So just turn up, and figure out what floats your boat because this truly is the place to be!

E-Summit

Entrepreneurship Cell IIT Madras arranges an annual flagship event, E-summit, focused entirely on young entrepreneurs and their ventures. There is something for everyone to gain and learn, in the form of knowledge, competitions, funding opportunities for the startups. It provides a platform to learn about entrepreneurship, creativity, venture business ecosystem for any interested young ones. E-summit involves major events, namely, Youth conclave, Innovator's conclave, Startup conclave and Growth conclave. Youth conclave is envisioned to promote entrepreneurial spirit and aptitude amongst the next generation of graduates hence paving the way for these young leaders to ride the wave of change in the careers they undertake. Innovators' conclave focuses on a marathon of innovation through competitive Business planning and comprehensive case-study events. Startup conclave aims to accelerate startup growth, focuses on providing networking. Growth conclave brings in industry experts and it aims to provide the best learning opportunities to upskill oneself and one's startup via industry interactions.

SPORTS ACTIVITIES AND FACILITIES

Sports

Sports at IIT Madras generates a lot of enthusiasm, not only from within the campus, but from other colleges in the city and the country as well. The academic calendar is packed with sporting events, intra-hostel and inter-hostel events, inter-collegiate and inter-IIT tournaments. All hostels actively compete to win the coveted Schroeter Cup which is the Inter-Hostel sports championship.

The institute has excellent sporting facilities in the campus which include:

- IIT-Chemplast cricket field
- Athletics stadium
- Synthetic tennis & wooden badminton courts
- Three floodlit synthetic basketball and three volleyball courts

- A swimming pool of Olympic standards
- Hockey & football fields with flood-lights
- A well-equipped gymnasium
- Two newly constructed world class squash courts

All this, combined with the untiring commitment and enthusiasm of the student community, with encouragement and guidance from the faculty has created tremendous opportunities for students to hone their talents. It is no wonder then that tournaments in IITM have continued to draw teams and colleges from all over the country.

Blessed with a sprawling and spacious campus, IITM has the facilities to cater to the most active sportsmen and sportswomen.

Intra-Hostel and Inter-Hostel Competition

During the course of the year, all the hostels compete for the 'Schroeter' (pronounced as "*shroy-eter*" ... read more about it on the IITM sports website) – a trophy for the best hostel in sports. So fierce is the competition, that you might just be reminded of an India-Pakistan Cricket match! You have got to witness it to believe it. In September, every year, the institute hosts Sportsfest, an intercollegiate meet for local colleges, in Tennis, Volleyball, Basketball, Hockey, Football, Table Tennis, Badminton and Aquatics. Other specific sports events are also hosted such as Sanmar cricket tournament and Gerhard Fischer and Kokila Rajaiah, All-India Basketball tournament for men and women.

The even semester (Jan – May semester) arrives and you have a feast of informal events starting from 6-a-side hockey, 3-a-side-baski, 6-a-side footer (football), 9-a-side cricket, 3-a-side volley and so on. All this and more await you—a seemingly endless list of events—all played at Sangam (look up campus map to locate it!) under floodlights. The Gymkhana Day marks the culmination of all the sports activities for the academic year. Sign of true celebrations is sure to erupt from the Schoeter-winning hostel.

One sec... Where does it all begin? Where do you start off if you are a novice in sports? Well, the answer won't lie far away once you are in the hostel. In addition to a playing area within its quadrangle where Cricket, Football, Hockey, etc. are played, every hostel has facilities for TT, Carrom, Chess, Volleyball and Baski. There is nothing to be bashful about being a beginner. Every year, there are a few people in every sport team, who had started playing only after they came to the institute, and learnt to play well enough to represent the Institute in Inter-IIT, one of the highest honours in sports that an IITian sportsperson can hold. Everyone has to make a beginning somewhere. Use the available resources to the fullest!

Inter-IIT Sports

Held annually by rotation among the IITs, the Inter-IIT meets aim at promoting the interaction between students of the various IITs and encouraging sportsmanship. The meet is held in December after the end of the odd semester. IIT Madras had hosted the event a couple of years ago in conjunction with its Golden Jubilee celebrations. A General Championship (GC) is awarded to the team with the best performance in the Inter-IIT Sports meet and the Inter-IIT

Aquatics meet (held in October). In these games, a fierce competition coupled with a great spirit of sportsmanship mark these as the most memorable moments of any IIT student life. It is during this week-long event, that IITians get perhaps their only opportunity to meet and interact with students from other IITs. IIT Madras has excelled continually at these games, winning the general championship (GC) eleven times in a row in the past. IIT Madras has a great history in Inter-IIT with over 19 wins in the 47 meets, thanks to an excellent performance of IITM students.

Location and Accessibility

IIT Madras campus is located on the Sardar Patel Road, about 12 kms from Chennai Central Railway Station. The notable landmarks around our campus are the Guindy Snake Park adjacent to the IIT main gate, Gandhi Mandapam (Anna University stop), Madhya Kailash temple and the Central Leather Research Institute (CLRI) campus directly opposite to our campus.

For more information please visit: <http://www.iitm.ac.in>

Indian Institute of Technology Madras (popularly known as **IITM** or **IIT Madras**) is a [public technical university](#) located in [Chennai, Tamil Nadu, India](#). It is one of the eight public [Institutes of Eminence](#) of India. As one of the [Indian Institutes of Technology](#) (IITs), IIT Madras is also recognized as an [Institute of National Importance](#).^[6]

Founded in 1959 with technical and financial assistance from the former government of [West Germany](#), it was the third Indian Institute of Technology established by the [Government of India](#).^{[7][8]} IIT Madras is consistently ranked as the top engineering institute in India by the [Ministry of Education's National Institutional Ranking Framework](#) since the inception of the NIRF ranking system in 2016.^{[9][10][11]}

History[edit]

Main article: History of Indian Institutes of Technology

In 1956, the [West German](#) Government offered technical assistance for establishing an institute of higher education in engineering in India. The first Indo-German agreement was signed in [Bonn](#), West Germany in 1959 for the establishment of the Indian Institute of Technology at Madras. IIT Madras was started with technical, academic and financial assistance from the Government of [West Germany](#) and was at the time the largest international educational project sponsored by the West German government. The Government of the Federal Republic of Germany has agreed to provide the following assistance in the establishment of a higher technological institute at Madras:

- A workshop, laboratory equipment, and a library whose total value does not exceed ₹1.8 crore (equivalent to ₹166 crores or \$20 million in 2024).^[12]
- Twenty German professors to serve at the institute for a period of four to five years
- Four German foremen for the workshops of the institute for two years
- Facilities for the training of twenty Indian teachers in German institutions^[13]

This has led to several collaborative research efforts with universities and institutions in Germany over the years.^[14] Although official support from the German government has ended, several research efforts involving the DAAD programme and Humboldt Fellowships still exist.

The Indian Institute of Technology, Madras started functioning with the first batch of 120 students being admitted in July 1959 to the first year of the Engineering Course.^[15] The institute was inaugurated in 1959, by the then Union Minister for Scientific Research and Cultural Affairs. The first batch had an overall strength of 120 students from across India.^[16] In 1961, the IITs were declared to be Institutes of National Importance. The first convocation ceremony was held on 11 July 1964, with Dr. S. Radhakrishnan, then the president of India, delivering the convocation address and awarding the degrees to the inaugural batch of students.^[17] The institute got its first women students in the BTech batch of 1966.^[18] IIT Madras celebrated its Golden Jubilee in 2009, and its Diamond Jubilee in 2019.^[19]

Campus^[edit]

The main entrance of IIT Madras is on Sardar Patel Road, flanked by the residential districts of Adyar and Velachery. The campus is close to the Raj Bhavan, the official seat of the Governor of Tamil Nadu. Other entrances are located in Velachery (near Anna Garden MTC bus stop, Velachery Main Road), Gandhi Road and Taramani gate (close to Ascendas Tech Park).

The campus is located 10 km (6.2 mi) from the Chennai Airport, 12 km (7.5 mi) from the Chennai Central Railway station, and is connected by city buses. Kasturba Nagar is the nearest station on the Chennai MRTS line.

Two parallel roads, Bonn Avenue and Delhi Avenue, cut through the faculty residential area before they meet at the Gajendra Circle, near the Administrative Block. Buses regularly ply between the Main Gate, Gajendra Circle, the Academic Zone, and the Hostel Zone.

IIT Madras is the first IIT in India to set up an offshore campus in Tanzania in Africa as part of the Central government's IIT expansion plans abroad.^{[20][21]} In July 2023, education officials of India and Tanzania said that an IIT Madras satellite campus in the Tanzanian autonomous territory of Zanzibar would begin offering classes in October 2023 and this has started functioning as announced.^[22] IITM - Zanzibar is also the first IIT to have a Woman Director - the Director of the Tanzania Campus is Prof. Preeti Aghalayam.^[23] This progressive IIT is now, all set to establish its second international campus in Sri Lanka.^[24]

Student Hostels^[edit]

Most students at IIT Madras reside in hostels, where extracurricular activities complement the academic routine. The campus has 21 hostels, of which, six, Sabarmati, Sarayu, Sharavati, Swarnamukhi and the convertible Tunga - Bhadra are currently exclusively for women. In earlier times, each hostel had attached dining facilities but all of them have been closed down starting around 2010. Dining facilities are provided in three centralised halls: Nilgiri, Vindhya and Himalaya. Recently (2023) a new mess has been opened in old Cauvery hostel mess for Jain food. Students are assigned to hostels upon matriculation, where they usually reside for the entire duration of their course of study.



Godavari Hostel



Brahmaputra Hostel



Sabarmathi Hostel

The halls of IITM are:

Boys' Hostels

Alakananda	Brahmaputra	Cauvery	Ganga
Godavari	Jamuna	Krishna	Mahanadhi
Mandakini	Narmada	Pampa	Saraswathi
Sindhu	Tamiraparani	Tapti	
Girls' hostels			
Bhadra	Sabarmati	Sarayu	Sharavathi
Swarnamukhi	Tunga		

- International hostel under construction, name to be announced

Sindhu, Pampa, Mahanadhi and Tamiraparani are seven-storeyed whereas all the other hostels are three or four storeyed. These four hostels can accommodate more than 1,200 students.^[25] The older hostels were all three-storeyed till the early 2000s when extra rooms were added. An additional new floor in the three-storeyed hostels which generally house the undergraduate students and a new block in place of the mess halls of these hostels have been constructed to accommodate for the increased intake of the students. These new blocks could be used as entrances for these hostels. As of 2022, old Mandakini has been demolished and a new multi-storey block opened, with provision to accommodate approximately 1200 students.^[26]

Facilities[edit]

IIT Madras provides residential accommodation for its students, faculty, administrative and supporting staff, and their families. The residential houses employ private caterers. The self-contained campus includes two schools ([Vanavani](#) and [Kendriya Vidyalaya](#)), three temples (Jalakanteshwara, Durga Peliamman and Ganapathi), three bank branches ([SBI](#), [ICICI](#), [Canara Bank](#)), a hospital, shopping centres, food shops, a gym, sleeping room and cricket, football, hockey and badminton stadiums. Internet is available in the academic zone and the faculty and staff residential zone. Earlier Internet was limited in hostel-zone from 2:00 pm till midnight and from 5:00 am to 8:00 am, but increasing demand during academic semester led to round-the-clock Internet service.^[27]

IIT Madras also has [supercomputing](#) capability, with the [IBM](#) Virgo Super Cluster with 97 teraflops worth of computational power.^[28]

Organisation and administration

Governance

IIT Madras is an autonomous statutory organisation functioning within the Institutes of Technology Act. The twenty three IITs are administered centrally by the IIT Council, an apex body established by the Government of India. The Minister of Human Resources and Development is the chairman of the council.^[29] Each institute has a board of governors responsible for its administration and control. The finance committee advises on matters of financial policy, while the Building and Works Committee advises on buildings and infrastructure.

The Senate comprises all professors of the institute and decides its academic policy. It controls and approves the curriculum, courses, examinations, and results. It appoints committees to examine specific academic matters. The director of the institute serves as the chairman of the Senate. The current director (appointed in 2022) is Kamakoti Veezhinathan,^[30] who obtained his Ph.D. and M.S in CSE from IIT Madras.

Three Senate Sub-Committees – The Board of Academic Research, The Board of Academic Courses and The Board of Students – help in academic administration and in the operations of the institute. The Board of Industrial Consultancy and Sponsored Research addresses industrial consultancy and the Library Advisory Committee oversees library matters.

Departments

IIT Madras has the following departments

- Aerospace Engineering
- Applied Mechanics
- Biotechnology(Bhupat and Jyoti Mehta School of Biosciences)
- Chemical Engineering
- Chemistry
- Civil Engineering
- Computer Science and Engineering (CSE)
- Data Science and Artificial Intelligence
- Electrical Engineering (EE)
- Engineering Design
- Humanities and Social Sciences (HSS)
- Management Studies (DoMS)
- Mathematics (MA)
- Mechanical Engineering (ME)
- Medical Science and Technology (MST)
- Metallurgical and Materials Engineering
- Ocean Engineering
- Physics

Academics

IIT Madras offers [undergraduate](#), [postgraduate](#) and research degrees across 18 disciplines in Engineering, Science, Humanities and Management.^[31] About 600 faculty belonging to science and engineering departments and centres of the institute are engaged in teaching, research and industrial consultancy.

The institute has 18 academic departments and advanced research centres across disciplines of engineering and pure sciences, with nearly 100 laboratories. The academic calendar is organised around the semester. Each semester provides a minimum of seventy days of instruction in English. Students are evaluated on a continuous basis throughout the semester. Evaluation is done by the faculty, a consequence of the autonomous status granted to the institute. Research work is evaluated on the basis of the review thesis by peer examiners both from within the country and abroad. Ordinances that govern the academic programme of study are prepared by the Senate, the highest academic body within the institute.

IITM is also gearing up to launch a new and completely online BEd degree programme in Maths and Computing to improve maths teaching in schools, as said by the director at the G20 seminar at IIT Madras.^[32]

Grading System and Student Evaluation[\[edit\]](#)

The [Indian Institutes of Technology](#) have strict rules for grading. Depending on the course the evaluation is based on participation in class, attendance, quizzes, exams and/or papers.

Continuous evaluation is done by course instructors. The Evaluation System of IIT Madras^[33] which is also used in other IITs is the Cumulative Grade Point Average with a scale from 0 to 10 which is converted to letters:

Letter Grade	Grade Points	in Words
S	10	Excellent (top students/high performer)
A	9	Very Good
B	8	Good
C	7	Satisfactory Work
D	6	Below Average
E	4	Poor (but passed)

U	0	Failed
W	0	Shortage of attendance (usually below 85%)

CGPA then gets calculated as the cumulative credit-weighted average of the grade points: CGPA = $(\sum Ci \cdot GPi) / (\sum Ci)$ where: N is the number of courses Ci is credits for the ith course GPi is grade points for the ith course CGPA is the cumulative grade point average

The CGPA is not the same as the one commonly used in the United States. In India some credits might be awarded during Bachelor studies for Co-curricular and Extra-curricular Activities, while during the Master Programme this is not allowed. Through agreements with numerous international organisations, IIT grades are accepted from many international organisations like NTU, [NUS](#) and [DAAD](#).

Additionally, the attendance of the students is evaluated with VG for very good (always present), G for good (not present every lecture) and P for poor (student was present less than 85% of lectures).

Admission tests[\[edit\]](#)

For the undergraduate curriculum, admission to the [BTech](#) and Dual Degree (BSc + MSc or BTech + MTech) programme is done through the [Joint Entrance Examination – Advanced](#) (JEE-Advanced). IIT Madras conducted [JEE Advanced](#) in 2017. Admission criteria to the five-year integrated [Master of Arts](#) (MA) programme is changed as Humanities and Social Sciences Entrance Examination (HSEE), an IIT Madras specific exam is not conducted from 2023.^[34] Admissions to the 4 year BS degree programme for in Data Science and Applications are done through 2 channels: [JEE](#) and their own entrance test called the Qualifier exam.^[35]

For the postgraduate curriculum, admission to the [MTech](#) and [MS](#) programmes are through the [Graduate Aptitude Test in Engineering](#) (GATE); after 2022, with the discontinuation of 5 year integrated MA program and the same becoming a 2-year PG program,^[36] admissions is through GATE for the MA program also. The [Joint Admission Test to MSc](#) (JAM) is the entrance exam for the two-year [MSc](#) programme, and other post [BSc](#) programmes. [MBA](#) candidates are accepted through the [Common Admission Test](#) (CAT).^[37]

Academic research programmes[\[edit\]](#)

The institute has departments and advanced research centres across the disciplines of engineering and the pure sciences, and nearly 100 laboratories.^[38]

Research programmes concern work undertaken by faculty members or specific research groups within departments that award an MS or PhD degree. Research is carried out by scholars admitted into these departmental programmes, under the guidance of their faculty. Each department makes known its areas of interest to the academic community through handbooks, brochures and bulletins. Topics of interest may be theoretical or experimental. IIT Madras has initiated 16 inter-disciplinary research projects against identified focus areas.

Partnership with other universities[edit]

The institute maintains academic friendship with educational institutes around the world through faculty exchange programmes. The institute has signed [Memoranda of Understanding](#) (MOUs) with foreign universities, resulting in cooperative projects and assignments.^[39] The list of partners includes [Auckland University of Technology](#), [Massey University](#), [Durham University](#), [Sydney University](#), [University of Colombo](#) and other prestigious universities around the world.

Rankings[edit]

University and college rankings

General – international

[ARWU](#) (2022)^[40] 701–800

[QS](#) (World) (2023)^[41] 250

[QS](#) (Asia) (2023)^[42] 53

General – India

[NIRF](#) (Overall) (2023)^[43] 1

[NIRF](#) (Research) (2023)^[44] 2

[QS](#) (India) (2020)^[45] 4

Engineering – India

[NIRF](#) (2023)^[46] 1

Government colleges:

[Outlook India \(2022\)](#)^[47] 2

Business/Management – India

[NIRF \(2023\)](#)^[48] 15

Internationally, IIT Madras was ranked 250 in the [QS World University Rankings](#) of 2023^[41] and 53 in Asia.^[42] It was ranked 701–800 in the world by the [Academic Ranking of World Universities](#) of 2022.^[40]

IIT Madras was ranked 1st in the overall category,^[43] 2nd among research institutions,^[44] 1st among engineering colleges^[46] and 15th among management schools^[48] in India by the [National Institutional Ranking Framework](#) (NIRF) in 2023. [Outlook India](#) ranked IIT Madras 1st among government engineering colleges^[47] in 2022. IIT Madras was ranked 4th in the [QS India Rankings](#) of 2020.^[45]

IIT Madras BS in Data Science won Silver in the [Wharton \(University of Pennsylvania\) - QS Reimagine Education Awards](#)^[49]

Industrial Consultancy and Sponsored Research (ICSR)^[edit]

Through industrial consultancy, faculty and staff undertake industry assignments that may include project design, testing and evaluation, or training in new areas of industrial development. Industries and organisations like the [Indian Ordnance Factories](#),^[50] reach out to the IIT faculty to undertake assignments channeled through the Centre For Industrial Consultancy and Sponsored Research (ICSR).

National organisations sponsor programmes of research by funding projects undertaken by the faculty. Such research is time bound and allows project participants to register for a degree. Project proposals are usually prepared by the IIT faculty and forwarded to interested organisations, based on the nature of their research and their interest to fund such projects.

Sponsored projects are often vehicles for new resources within departments, and often permit their project staff to register for academic degrees in the institute. All sponsored research activities at the institute are coordinated by ICSR.

National Programme on Technology Enhanced Learning (NPTEL)^[edit]

To improve the quality of higher education in India, IIT Madras came up with an initiative called NPTEL (National Programme on Technology Enhanced Learning)^[51] in the year 2003.^[52] As per this initiative, all the IITs, along with the [IISc Bangalore](#) would come up with a series of video lecture based courses across all the streams of engineering.^[53] This initiative has gained wide popularity in India and the lectures are being used by several engineering students from across India. It is the largest online repository in the world of courses in engineering, basic sciences and selected humanities and social sciences subjects.^[citation needed]

IITM Research Park[\[edit\]](#)



Walkway between blocks of the Research Park

IITM Research Park is India's first university-based research park.^[54] The Research Park functions to promote innovation in established companies and provide a nurturing ecosystem to startups through incubation efforts and technical infrastructure.^[55] Following its success, 50 research parks were planned as part of the Start Up India initiative of the Central Government of India. Corporate clients of IIT Madras Research park include Defence Research and Development Organisation ([DRDO](#)), [Bharat Heavy Electricals](#) Limited, [Saint-Gobain](#) and [Forbes Marshall](#). [Ather Energy](#), Hyperverge, Gyandata and Healthcare Technology Innovation Centre(Sponsored by [Department of Biotechnology](#), [Government of India](#))^[56] are some of the startups and centers incubated at the Research Park. The Research Park is a prime driver for the very large number of startups incubated at IIT Madras.^[57]

IOE-IITM Research Initiatives[\[edit\]](#)

As an Institute of Eminence, IITM has opened various research centres that include important domains like [artificial intelligence](#) and [data sciences](#), big networks, complex systems, chemistry, earth sciences, math and cyber security, ocean technology, quantum science and technology and sensing and vision, etc.

Pravartak[\[edit\]](#)

IITM Pravartak is funded by the [Department of Science and Technology](#), GOI, under its National Mission on Interdisciplinary Cyber-Physical Systems, and it's hosted as a Technology Innovation Hub (TIH) by IIT Madras. It focuses on Technology, Entrepreneurship and Human resource skill development through various initiatives. It provides hands on programmes, hybrid courses like

Out of the Box thinking in Maths, Winter school on Advanced Quantum Computing, Wireless Networks, Blockchains and others.

Alumni and Corporate Relations[\[edit\]](#)

Initiatives and Engagement[\[edit\]](#)

The Office of Alumni and Corporate Relations initiates, promotes, and facilitates connections among the diverse network of IIT Madras alumni as well as corporations. Through collaborations, mentorship programs, and knowledge-sharing initiatives, the office contributes to the institute's progress and goals. The office fosters alumni engagement with the institute through various initiatives such as organising reunions across batches, recognizes distinguished alumni, and ensures that alumni stay in touch with developments at IIT Madras through newsletters and regular communications. It is currently headed by Prof.Mahesh Panchagnula from the Dept. of Applied Mechanics, IIT Madras. [\[58\]](#)

Collaborations with Corporations[\[edit\]](#)

The office has facilitated various technology-driven social impact collaborations with various corporations and corporate foundation arms, under Corporate Social Responsibility (CSR) in India. Partnerships with both Alumni and corporatations are undertaken through the Office of Institutional Advancement which functions as part of the Alumni and Corporate Relations office. [\[59\]](#)

Modern and Advanced Courses[\[edit\]](#)

This section needs additional citations for verification. Please help improve this article by adding citations to reliable sources in this section. Unsourced material may be challenged and removed.
Find sources: "IIT Madras" – news · newspapers · books · scholar · JSTOR (March 2023) (Learn how and when to remove this template message)

BS Degree in Data Science and Applications[\[edit\]](#)

The institute launched a 4-year full time UG Bachelor of Science degree (BS) program in [Data Science and Applications](#) in 2022 with unique flexible exit options as per the NEP, which was

earlier a virtual 3 year BSc degree programme in Programming and Data science. The 142 credit program consists of three levels - Foundation (32 credits), Diploma (54 credits), and Degree (56 credits).^[60] and a total of 36 theory courses and 4 project courses. The degree programme is currently being run in a hybrid mode with the course-wise best of the faculty members across India. The renowned faculty from the 1st year of this Data science dept. include faculty Dr. Madhavan Mukund (Director, Chennai Mathematical Institute),^[61] Dr. Rajesh Kumar (Professor, Department of Humanities and Social Sciences, IIT Madras),^[62] Dr. Andrew Thangaraj (Professor, Electrical Engineering Department, IIT Madras),^[63] Sudarshan Iyengar (Associate Professor & HOD, Department of Computer Science and Engineering, IIT Ropar).^[64]

The IIT Madras BS in DSA currently follows a Trimester academic system, where each academic year is divided into 3 terms each of 4 months duration: Jan-April (Winter), May–August (Spring) and Sept-Dec (Fall)

The official IITM approved societies and clubs under the BS in DS branch include: Ramanujan Society For Research (RaSoR), Pravaha (Dance society), Anime society, Adhyay (civil services society), Raahat (Mental health and wellness society), Cosmos (Tech society), Erudite (Oratory society), Art Society, Sahityika (Literary society), Film society, Heighters (esports club), WYZ Kids (Quiz club), Akord (Music society), Aayam (Drama society) and Shah Maat (Chess society)

Students at IITM pursuing BS in DS get income-based (who have low family income) fee-waivers each term. Also students belonging to EWS, SC/ST, OBC and PwD categories get these waivers. Verizon India, L&T Technology Services provide scholarship to IIT Madras BS Degree Students.

The programme has won Silver in the [Wharton \(University of Pennsylvania\)](#) - [QS Reimagine Education Awards](#)^[65]

Robert Bosch Centre for Data Science and AI (RBCDSAI)[\[edit\]](#)

The RBCDSAI was set up in 2017 with a funding from the institute to encourage interdisciplinary research. In the last 5 years, it has grown to be the pre-eminent interdisciplinary research centre for Data Science and AI in India and is one of the country's largest groups in network analytics and deep reinforcement learning.

[Google](#) has granted IIT Madras \$1 million for setting up India's first multidisciplinary centre for Responsible AI.^[66]

BS Degree in Electronic Systems (ES)[\[edit\]](#)

IITM launched the 4-yr BS undergrad degree in [Electronic Systems \(ES\)](#) in March 2023 to meet the significant and growing demand for skilled graduates in the electronics and embedded systems sector in [India](#).^[67] This programme would also run in hybrid mode. The faculty coordinators of this dept. include Dr. Aniruddhan and Dr. Boby George from Dept. of [Electrical Engineering](#) at IITM.

Students need to have Physics and Maths in class 12 as mandatory requirements to apply for the degree. Students can apply through JEE channel or their own entrance or qualifier examination.

Unlike the BS in DSA which follows a tri-mester curriculum, this will follow a semester system (2 semesters per year) with the same concept of 2 in-centre quizzes and an end term exam in each

semester. Keeping in line with the new [NEP](#), IITM has provided a flexibility to exit earlier with a Foundation Certificate or Diploma. However, one needs to complete 142 credits to achieve the BS degree in ES.

IIT Madras Zanzibar Campus[\[edit\]](#)

IIT Madras established a new Campus in Zanzibar (Tanzania) [IITM Zanzibar Campus](#) in July 2023 to provide quality education in Tanzania. IIT Madras is the first IIT to establish a campus outside India. [\[68\]](#)[\[69\]](#)[\[70\]](#)

Offered Degrees -

1. BS in Data Science and Artificial Intelligence
2. MTech in Data Science and Artificial Intelligence

Diploma Courses at IITM[\[edit\]](#)

IITM also offers [Diploma](#) in Programming and Diploma in Data Science separately. Students who've completed a UG degree or have completed at least two years of an undergrad degree are eligible to sit for the DAD qualifier exam (duration: 3 hours for Diploma in programming and 4 hours for that of Data science) which serves as the entrance test for these programmes. [\[citation needed\]](#)

Student activities[\[edit\]](#)

Festivals[\[edit\]](#)

E-Summit IIT Madras[\[edit\]](#)



E-Summit by the Entrepreneurship Cell E-Cell of IIT Madras, is IITM's annual flagship event and only ISO 9001:2015 certified entrepreneurship summit focusing on young entrepreneurs and their ventures. [\[citation needed\]](#)

Shaastra[\[edit\]](#)

Main article: [Shaastra](#)

Shaastra is the annual technical festival of IIT Madras. It is held in the second week of January^[71] and is a ISO 9001:2015 certified student organised festival.^[citation needed] It consists of various engineering, science and technology competitions, summits, lectures, video conferences, exhibitions, demonstrations and workshops. The festival is traditionally held over four days and four nights during the first week of January. It has so far seen twenty one editions, having started in its current avatar in the year 2000.

Saarang[\[edit\]](#)

Main article: [Saarang](#)

Saarang is the annual social and cultural festival of IIT Madras. It is a five-day-long event held in early January every year and attracts a crowd of 70,000 students and young people from across the country, making it the largest student-run fest in India.^[citation needed] Saarang events include speaking, dancing, thespian, quizzing and word games, professional shows (nicknamed Proshows) and workshops on music, fashion, art, and dance.

Paradox[\[edit\]](#)

Paradox is the fest organised for the IIT Madras Bachelor of Science degree students. It is held 3 times a year. Paradox in Saavan and Paradox in Margazhi^[72] are held hybrid around August and December respectively and consist of various cultural, sports, professional events, hackathons. The main annual fest is held at the IITM campus. It's the biggest physical gathering of IITM Online BS students that happens in the month of May every year, as the summer vacation for students begin.^[73]

Department festivals[\[edit\]](#)

Several departments organise department festivals. Samanvay, Biofest, ExeBit, Wavez, Mechanica, CEA Fest, ChemPlus, Amalgam and Forays are some of the festivals organised by the Department of Management Studies, Computer Science and Engineering, Ocean Engineering, Mechanical Engineering, Civil Engineering, Chemical Engineering, Metallurgical and Materials Engineering and Maths departments respectively. Department of Humanities and Social Sciences hosts Annual Academic Conference.

Fest name	Department
Aero fest	Aerospace Engineering
Amalgam	Metallurgical and Materials Engineering

ElecFest	Electrical Engineering
Samanvay	Department of Management Studies
Biofest	Biotechnology
ExeBit	Computer Science and Engineering
CEA Fest	Civil Engineering
Chemplus	Chemical Engineering
Forays	Mathematics
Mechanica	Mechanical Engineering
Wavez	Ocean Engineering
Annual Academic Conference	Humanities and Social Sciences
Bhoutics	Physics
CiHS	Chemistry

The Entrepreneurship Cell[\[edit\]](#)

The Entrepreneurship Cell at IIT Madras believes that entrepreneurship is not just about starting companies and building businesses but a pathway towards India's socio-economic development. E-Cell was earlier known as C-TIDES, and was rechristened in 2015 as the entrepreneur.

E-Cell IIT Madras is an active non-profit, a completely student-run organisation to help encourage entrepreneurship.

Centre For Innovation (CFI)[edit]

Set up with funds donated by the batch of 1981. CFI was started in 2008 as a student-run lab for creative output of the budding engineers of IIT Madras. It provides students the necessary platform for realising their ideas. It houses 13 clubs and 7 competition teams, representing IIT Madras on various technical events. Summer School has been started by clubs to teach freshers popular topics during summer vacation.^[74]

CFI houses workspace of student teams such as Raftar Formula Racing, Team Anveshak, Mars rover team, Abhiyaan, autonomous vehicle team, Avishkar, hyperloop team, Team Abhyuday, rocketry team, Agnirath, solar car team and iGem.^[75]

The annual flagship event of CFI, the Open House displays the projects of all CFI clubs, along with the works of the Competitive Teams.^[76]

Extra Mural Lectures (EML)[edit]

Launched in 1980 by a group of students with support from the then director of IIT Madras, the late Prof. P.V. Indiresan, the main aim of the Extra Mural Lectures series is to expose the IIT Madras community to the ideas and experiences of eminent personalities from diverse backgrounds. Over the years, lectures included the late former president of India [A.P.J. Abdul Kalam](#), Nobel Laureate [The 14th Dalai Lama](#), Nobel Peace Laureate [Kailash Satyarthi](#), Chess Grandmaster [Vishwanathan Anand](#), filmmaker [S.S. Rajamouli](#), Honorable Governor Shri. [E.S.L. Narasimhan](#), Honorable Minister of Railways Shri. [Suresh Prabhu](#), current vice president of India Shri. [M.Venkaiah Naidu](#), music composer [Ilayaraja](#), co-founder of Infosys Shri. [Kris Gopalakrishnan](#), Ambassador of Japan to India H.E. Mr. [Kenji Hiramatsu](#), then defence secretary of India Mr. [Ajay Kumar](#) and ISRO chairman [S. Somanath](#) have been hosted at IIT Madras for Extra Mural Lectures, to motivate the students and broaden their perspectives.

Extracurricular activities[edit]



Deer at IIT Madras, in the open ground between SAC and the stadium

The Sustainability Network (S-Net) is an alumni-student-faculty initiative launched in May 2009 to help preserve the unique niche of one of the best educational campus in India. S-Net was envisioned to work towards developing and deploying solutions for making a self-sustaining

campus (focusing on energy/electricity, water, and waste management), which could eventually be replicated across the country through tie-ups with other educational institutions.^[77]



An [albino](#) blackbuck at IIT Madras, IITM is also home to Endangered Species of [blackbuck](#)

The Fifth Estate^[78] is the official media body of IIT Madras and gives an insight into the happenings inside the campus and important news related to the institute.

The Open Air Theatre hosts the weekly movie, a Saturday night tradition, besides other activities. It seats over 7,000.

NSS in IIT Madras has been noted for taking up socially relevant initiatives, taken up as individual projects to create an impact on the society as well as the students. The wing of NSS at IITM has over 400 students every year, contributing to the cause of the scheme. Since its inception, it has achieved many milestones in its history as a unique, student-run organisation. Linked with several NGOs and social organisations both within and outside Chennai. By working out projects from Braille magazines to technology interventions, from teaching children in urban slums to educational video content, NSS (IITM) seeks to challenge the mediocre thinking, and reach out into the darkness, to pull a hand into the light.

Student bodies such as Vivekananda Study Circle (VSC), Islamic Study Circle, IIT Christian Fellowship, Genesis and Reflections focus on spiritual discussions.

Regional groups include Marathi Mitra Mandal(MMM), Hindi Mitra Mandal(HMM), Karka Kasadara(Tamil), Kerala Kala Samithi(KKS), Garvi Gujarati Sangathan(GGS), Telugu Samskruthika Samithi and Kannada Samskrutika Sangh, North-east Students Association(SADINER), and African Students Association(AFSA) by students from African Continent.

The campus has evolved a slang, called Insti Lingo, attracting a published Master's thesis at a German University.^[79] A mix of English, Hindi, Telugu (Gult), Malayalam (Mallu) and Tamil (Tam), aspects of the campus slang have been adopted by some other Chennai colleges.

Unlike its sister institutions, IIT Madras has no single Indian language used among its students: [Tamil](#), [Telugu](#), [Malayalam](#), [Marathi](#), [Kannada](#), [English](#) and [Hindi](#) are all very commonly used. All student participatory activities like debating, dramatics, short-film making, and others are held in English. This is even reflected in the slang that uses more of English and other Indian regional languages than Hindi, unlike in IITM's northern counterparts.

Prakriti Wildlife Club at IIT Madras was founded in April 2002 by students, faculty, staff, residents, and alumni who are wildlife enthusiasts.^[80]

IIT Madras Heritage Centre[edit]



Entrance of the Heritage Centre at IIT Madras

The Heritage Centre was formally inaugurated by [Dr Arcot Ramachandran](#), former Director IIT Madras on 3 March 2006. The centre is located on the ground floor of the administration building. The actual idea of a Heritage Centre was mooted in the year 2000 and has become a reality due to the efforts of the Professor-in-charge Dr. Ajit Kumar Kolar and his team. The centre will function as a repository of material of heritage value and historical significance of various facets of the institute.

The exhibits include photographs, documents, publications, paintings, portraits, products developed and other articles. Information regarding important events, laboratory development, visits of important dignitaries, Indo-German cooperative activities, and academic achievements of faculty and students also are included. Aspects of IITM campus features and development, campus life and student activities are also included, thus broadening the scope of the centre in the future to non-academic activities also.

Controversies[edit]

Kiss of Love[edit]

Several members of the [Hindu Munnani](#) were arrested in November 2014 for organising a "spitting protest" outside the IIT-Madras after the institute played host to the '[Kiss of Love](#)' campaign.^[81] The members of the group gathered and started spitting at the pictures of students kissing and hugging at the kiss of love campaign the past week. Additionally, they also hurled abuse at the students.^[82]

Beef Fest[edit]

In 2017, Beef fest was organised by some students from APSC to protest against the central government's ban on cow slaughter.^[83] Events turned violent when a PhD student was attacked in student mess by some right wing students. Student sustained injuries and had to admit to hospital. IIT Madras had to release an official statement and a petition was filed in High Court to set up a peacekeeping committee.^[84] In June 2023, High Court disposed the petition.^[85]

Notable alumni

This article's list of alumni **may not follow Wikipedia's verifiability policy.**

Please [improve this article](#) by removing names that do not have independent reliable sources showing they merit inclusion in this article AND are alumni, or by incorporating the relevant publications into the body of the article through appropriate citations.

(December 2017)

Main article: [List of IIT Madras people](#)

- Arumugam Manthiram, director, Texas Materials Institute, Professor of Mechanical Engineering, [University of Texas at Austin](#)^[86]
- Anand Rajaraman, founder of Junglee; currently heading Kosmix.com with Venky Harinarayan
- Anant Agarwal, professor of Electrical Engineering and Computer Science at [MIT](#)^[87]
- Anima Anandkumar, Bren Professor of Computing at [California Institute of Technology](#). She is a director of Machine Learning research at NVIDIA.
- Arun Sundararajan, professor at Stern School of Business, [New York University](#)^[88]
- Atul Chokshi, materials engineer, [Shanti Swarup Bhatnagar](#) laureate
- B. N. Suresh, director of [IIST](#)
- B. Muthuraman, managing Director of [Tata Steel](#)
- Balaji Sampath, founder of [Ahaguru](#)
- Bhaskar Ramamurthi, director, IIT Madras (2011 – 2022)
- Gururaj Deshpande, founder of Sycamore Networks
- T. V. Rajan Babu, professor of chemistry at [Ohio State University](#)
- G. K. Ananthasuresh, professor at [Indian Institute of Science](#)
- Hari Balakrishnan, Fujitsu Chair Professor in the EECS Department at [MIT](#)^[89]
- Jai Menon, IBM Fellow, CTO and VP, Technical Strategy – IBM Systems and Technology Group
- B. Jayant Baliga, inventor of the insulated gate bipolar transistor ([IGBT](#))
- Jayaraman Chandrasekhar, computational chemist, [Shanti Swarup Bhatnagar](#) laureate

- [Kris Gopalakrishnan](#), co-chairman and co-founder of [Infosys](#)
- [Krishna Bharat](#), creator of [Google News](#), principal scientist, [Google](#)
- [L. Mahadevan](#), FRS, de Valpine Professor of Applied Mathematics, Physics and Biology, [Harvard University](#),^[90] [MacArthur Fellow](#) 2009^[91]
- [K. Mani Chandy](#), former chair of Engineering and Applied Science at [Caltech](#)^[92]
- [Marti G. Subrahmanyam](#), professor of finance, [Stern School of Business](#) at [New York University](#)
- [Murali Sastry](#), nanotechnologist, [Shanti Swarup Bhatnagar](#) laureate
- [Mas Subramanian](#), Milton Harris Chair Professor of Materials Chemistry at Oregon State University
- [Narayanan Chandrakumar](#), chemical physicist, [Shanti Swarup Bhatnagar](#) laureate
- [Neelesh B. Mehta](#), communications engineer, [Shanti Swarup Bhatnagar](#) laureate^[93]
- [Prabhakar Raghavan](#), vice president of Engineering, [Google](#) and Consulting Professor at [Stanford University](#)
- [R. Prasanna](#), guitarist and carnatic musician
- [Pinaki Majumdar](#), condensed matter physicist, [Shanti Swarup Bhatnagar](#) laureate^[94]
- [Prem Watsa](#), billionaire; founder, chairman, and chief executive of [Fairfax Financial Holdings](#), which owns [BlackBerry](#)
- [Radha Vembu](#), co-founder, [Zoho Corporation](#).
- [Ramanathan V. Guha](#), inventor of [RSS](#) feed technology, computer scientist at Google; won the Distinguished Alumnus award from IIT Madras in 2013
- [Ramesh Govindan](#), Northrop Grumman Chair in Engineering and Professor of Computer Science and Electrical Engineering at the University of Southern California; won the Distinguished Alumnus award from IIT Madras in 2014
- [Raghu Ramakrishnan](#), technical fellow and CTO, Information Services [Microsoft](#)
- [Raju Narayana Swamy](#), IAS Officer
- [Ramayya Krishnan](#), dean of the [Heinz College](#) at Carnegie Mellon University
- [S. Sowmya](#), carnatic vocalist
- [Timothy A. Gonsalves](#), computer scientist and first director of [IIT Mandi](#)
- Shashi Nambisan, director of the Center for Transportation Research and Education at [Iowa State University](#)
- [Sridhar Tayur](#), Ford Distinguished Research Chair and Professor of Operations Management at [Carnegie Mellon University](#); founder, SmartOps and OrganJet
- [Sridhar Vembu](#), founder and CEO of [Zoho Corporation](#)
- [Subra Suresh](#), former president of Carnegie Mellon University, former director of the [National Science Foundation](#), former dean of the [MIT School of Engineering](#)
- [Venkat Rangan](#), co-founder and CTO at Clearwell Systems
- [Venkatesan Guruswami](#), associate professor, Department of Computer Science, Carnegie Mellon University
- [Venky Harinarayan](#), co-founder [Kosmix](#)
- [Vic Gundotra](#), former senior vice president Google, creator of Google plus and MIT technology Review top innovators in world
- [Vinay Nair](#), visiting professor at [The Wharton School](#) and founding principal of Ada Investments
- [Viswanathan Kumaran](#), chemical engineer, [Shanti Swarup Bhatnagar](#) laureate

Companies run by IIT Madras alumni[\[edit\]](#)

- [Zoho Corporation](#), Indian Multinational Technology Company [95]
- [Ather Energy](#), Indian Electric Two Wheeler Manufacturer [96]
- [AgniKul Cosmos](#), an Indian Aerospace Manufacturer
- [Avishkar Hyperloop](#)
- [Saaf Water](#) [97][98]

Indian Institute of Technology Delhi

Type of the institute:	Indian Institute of Technology
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About the Institute

Established as a College of Engineering in 1961, this Institute was declared as Institution of National Importance under the Institutes of Technology (Amendment) Act 1963 and was renamed as Indian Institute of Technology Delhi. It was then accorded the status of a university with powers to decide its own academic policies, to conduct its examinations, and to award its degrees. Recently, IIT Delhi has been given the status of Institute of Eminence. The Institute is situated at Hauz Khas in South Delhi, bounded by Sri Aurobindo Marg on the east, Jawaharlal

Nehru University complex on the west, National Council of Educational Research and Training on the south, and the Outer Ring Road on the north. The Institute campus is about 20 km from Indira Gandhi International Airport, 10 km from domestic terminal of the airport, 19 km from Delhi main Railway Station and 14 km from New Delhi Railway Station. Delhi Metro has two gates opening at the Institute campus. The Institute campus extends over an area of ~320 acres with many topographical features, imaginatively laid out with picturesque landscape. With clean and wide roads, the campus presents a spectacle of harmony in architectural and natural beauty. Most of the students, faculty and staff reside on the campus. The main academic building houses various administrative offices and research facilities along with some teaching facilities. A new Lecture Hall Complex houses teaching facilities (classrooms / lecture halls and laboratories). Although each department/centre/school is a separate academic entity/unit, all the academic units together constitute an integrated complex.

Each academic year consists of two semesters and a summer term. The education system is organised around a credit system, which ensures continuous evaluation of a student's performance and provides flexibility to choose courses so as to facilitate progress at an optimum pace suited to one's ability or convenience. Each course is assigned certain number of credits depending upon the class contact hours. A minimum number of credits are to be completed in order to qualify for the award of degree. IIT Delhi has revised its curriculum with effect from academic session 2013-2014. The revised curriculum emphasises on self-learning, project activity and laboratory work. It leaves sufficient time for students to take part in other activities like sports and recreation, and encourages them to be creative and innovative.

As a break from the academic work, students have ample opportunities to explore other interests. The Students Activity Centre provides a number of facilities for students' extracurricular and physical development. The central two-storied block with a swimming pool and a gymnasium hall has amenities such as squash courts, hobbies workshop, seminar rooms, music rooms and other multipurpose rooms for reading and indoor games. The campus also provides such amenities as staff club, hospital, shopping centre, bank, post office, community centre, stadium and playing fields.

Credit System

The prominent features of the credit system are: the process of continuous evaluation of a student's performance, the absence of pass or fail on annual basis and the flexibility to allow a student to progress at the pace suited to his/her individual ability and convenience subject to the regulations of the credit requirements. Each course, except for a few special courses, has a certain number of credits assigned to it depending on its lecture, tutorial and laboratory contact hours in a week. Each course is coordinated by a member of the faculty called the course coordinator. He/she has the full responsibility for coordinating the course, coordinating the work of other members of the faculty involved in the course, holding tests and awarding grades. In case of any difficulty, students are expected to approach the course coordinator for advice and clarification. A letter grade with a specified number of grade points is awarded in each course for which a student is registered. A student's performance is measured by the number of credits that he/she has earned and by the weighted grade point average maintained by him/her. A minimum number of credits and a minimum degree grade point average (DGPA) are necessary in order to qualify for a degree.

Commencement of classes: To be decided (please see <https://home.iitd.ac.in/>)

Students who join IIT Delhi are expected to stand-by for notifications on email and keep checking the following page: <https://home.iitd.ac.in/>, for various updates about the above schedule and other admission related formalities.

Fee Structure

DETAILS OF INSTITUTE FEE TO BE PAID BY 2023 ENTRY UG STUDENTS (B.TECH/DUAL) AS UNDER -

A. For INDIAN NATIONALS INCLUDING PIO ([Persons of Indian Origin](#)) AND OCI ([Overseas Citizenship of India](#)) CARD HOLDERS :

Category	Tuition Fee (Rs.)	One Time Payment (Rs.)	Other charges	Refundable Caution Deposit (Rs.)	Medical Insurance Premium Per Annum + Student Distress Fund (Rs.)	Inst. Residence Fee (Rs.)	Total Institute Fees (a)		Balance amount payable (a)– (b) (See table below)	
							With Inst. residence allotted (Rs.)	With Inst. residence allotted (Rs.)	With Inst. residence allotted (Rs.)	With Inst. residence allotted (Rs.)
General /OBC (Annual Family Income > Rs. 5 lakh)	1,00,00	8,150	5,350	4,000 + 4,000 = 8,000	400 + 500 = 900	13,250	1,35,650	1,22,400	99,650	86,400
General /OBC (Annual Family Income Rs. 1.00	33,333	8,150	5,350	4,000 + 4,000 = 8,000	400 + 500 = 900	13,250	68,983	55,733	32,983	19,733

lakh upto 5.00 lakh)											
General /OBC # (Annual Family Income < Rs. 1 lakh)	Nil	8,15 0	5,35 0	4,000 + 4,000 = 8,000	400 + 500 = 900	13,2 50	35,6 50	22,4 00	-350* * -350*	-13,6 00**	
SC/ST /PD	Nil	8,15 0	5,35 0	4,000 + 4,000 = 8,000	400 + 500 = 900	13,2 50	35,6 50	22,4 00	19,6 50	6,40 0	

Details of payment to JOSAA:-

Sr. No.	Category	Already paid to JOSAA	JOSAA PROCESSING CHARGES	Payment through JOSAA Towards Institute FEE (b)
1.	Gen/OBC /EWS	Rs. 40000/-	Rs. 4000	Rs 36000
2.	SC/ST/P wD	Rs. 20000/-	Rs. 4000	Rs 16000

*Details of the breakup of other charges is given in Prospectus page no. (18-20)

**Extra payment will be adjusted in next semester's fee.

Note: Mess fee, Institute residence admission fee & residence security deposit charges will be paid through a separate link which will be provided around the time when students can come to the campus

B. For Foreign Students:

	Tuition Fees (UG Dollars)	Other Charges (Indian Rs.)	Total Charges
SAARC Countries	\$ 1000	Rs. 35,650	USD 1000 + Rs. 35,650
NON-SAARC Countries	\$ 2000	Rs. 35,650	USD 2000 + Rs. 35,650

Semester Fee	One-time admission charges	
Examination Fee = 1500	Admission Fee = 2000	Student Distress Fund = 400 (Per semester)
Registration/Enrollment Fee = 750	Student Welfare = 750	Insurance Scheme = 500 (Yearly)
Gymkhana = 1250	Modernisation Fee = 1500	Institute Security Deposit = 4000

Medical Fees = 750	Benevolent Fund = 400	Library Security = 4000
Internet & computer access fee= 1000	Alumni Fee = 2000	
Transport charges = 100	Training & Placement = 1500	
Total = 5350	Total = 8150	

Academic Structure

Courses of Study and Prospectus: Available at <https://home.iitd.ac.in/>; for any doubts or questions, please email adcur@admin.iitd.ac.in and/or arugs@admin.iitd.ac.in

Rules For Change Branch

A student is eligible to apply for change of branch at the end of the first year only, provided he/she satisfies the following criteria.

1. CGPA for General, EWS and OBC category students >8.00
2. CGPA for SC/ST and Person with Disability category students >7.00
3. Earned credits / non-graded units at the end of the second semester of first year: All credits of core and non-graded units of first year
4. One first year course has been identified by each programme, in which the grade of the applicant should be equal to or above B.
5. The student should have no disciplinary action against him/her

IIT Delhi, officially the **Indian Institute of Technology Delhi**, is a **public institute of technology** located in **Delhi, India**. It is one of the 23 **Indian Institutes of Technology** created to be Centre of Excellence for India's training, research and development in science, engineering and technology.

Established in 1961, it was formally inaugurated in August 1961 by [Humayun Kabir](#), Minister of Scientific Research & Cultural Affairs. The first admissions were made in 1961. The current campus has an area of 320 acres (or 1.3 km²) and is bound by the Sri Aurobindo Marg on the east, the [Jawaharlal Nehru University](#) Complex on the west, the [National Council of Educational Research and Training](#) on the south, and the New Ring Road on the north. It is flanked by [Qutb Minar](#) and the Hauz Khas monuments.^[4]

The institute was later decreed in the [Institutes of National Importance](#) under the Institutes of Technology Amendment Act, 1963, and accorded the status of a full University with powers to decide its academic policy, conduct its examinations, and award its degrees.^[5]

History[edit]

The concept of IIT was first introduced by Sh. N.M. Sircar, then a Member of Education on the Viceroy's executive council. Following his recommendations, the first Indian Institute of Technology was established in the year 1950 in [Kharagpur](#). In his report, Shri Sircar suggested that such Institutes should also be started in different parts of the country. The Government having accepted these recommendations of the Sircar Committee decided to establish more Institutes of Technology with the assistance of friendly countries who were prepared to help. The first offer of help came from the [USSR](#) who agreed to collaborate in the establishment of an Institute through [UNESCO](#) in Bombay. This was followed by the Institutes of Technology at [Madras](#), [Kanpur](#), and Delhi with collaborations with West Germany, the [United States](#), and [UK](#) respectively.^[citation needed]

H.R.H. [Prince Philip, Duke of Edinburgh](#) laid the foundation stone of the college at Hauz Khas on 28 January 1959 during his visit to India. The first admissions were made in 1961.^[5] The College of Engineering & Technology was registered as a [society](#) on 14 June 1960 under the Societies Registration Act No. XXI of 1860 (Registration No. S1663 of 1960–61). The students were asked to report at the college on 16 August 1961, and the college was formally inaugurated on 17 August 1961 by Humayun Kabir, Minister of Scientific Research & Cultural Affairs. Initially, the college ran in the Kashmire Gate campus of [Delhi College of Engineering](#) (now known as Delhi Technological University) before shifting to its permanent campus in Hauz Khas. The Department of Textile Technology of Delhi College of Engineering was shifted out en bloc to mark the beginning of the IIT Delhi at its new campus at Hauz Khas. The college was later accorded the status of a university and was renamed as Indian Institute of Technology Delhi.^[5] IIT Delhi celebrated its [Golden Jubilee](#) in 2011, and its [Diamond Jubilee](#) in 2021.

In 2018, IIT Delhi was one of the first six institutes to be awarded the [Institute of Eminence](#) status. According to a government statement issued earlier, these IoEs will have greater autonomy in that they will be able to admit foreign students up to 30% of the admitted students and recruit foreign faculty up to 25% of the faculty strength with enhanced research funding.^[6]

In July 2023, IIT Delhi signed a Memorandum of Understanding (MoU) to establish the first global campus of IIT-Delhi in Abu Dhabi, United Arab Emirates.^[7]

Campus[edit]

Main Campus[edit]



IIT – Delhi – Main Entrance signage

The primary campus of IIT Delhi is located in [Hauz Khas](#), South Delhi, with [Sonipat](#) and [Jhajjar](#) being the two satellite campuses. The campus of 325 acres (132 ha) is surrounded by the Hauz Khas area and monuments such as the [Qutb Minar](#) and [Lotus Temple](#).^[4] The campus is also close to other educational institutions such as the [Jawaharlal Nehru University](#), [Indian Institute of Foreign Trade](#), [International Management Institute](#), New Delhi, [All India Institute of Medical Sciences](#), [National Institute of Fashion Technology](#), [National Council of Educational Research and Training](#) (NCERT) and [Indian Statistical Institute](#).



Multi-Storey Building (MS) facing the front lawns



A garden in IIT Delhi

The IIT-D campus is divided into four zones:

- Student Residential Zone
- Faculty and Staff Residential Zone

- Student Recreational Area, which includes the Student Activity Center (SAC), football stadium, cricket ground, basketball courts, hockey field, lawn tennis courts and swimming pool
- Academic Zone that includes department offices, lecture theatres, Central Library, and workshops.

The student residential zone consists of 14 student hostels which are named after the mountain ranges of India. It is divided into two main sectors— one for the 11 boys hostels and another for the 3 girls hostels.^[8]

Sonipat campus^[edit]

Initially announced in 2012,^[9] the new **IITD-Sonipat campus** was unveiled in April 2018 by the **Chief Minister of Haryana** at the Technopark at **Rajiv Gandhi Education City, Sonipat**.^[10] The Technopark, of which this campus is part, itself was established at a cost of INR175 crore (1.75 billion).^[10] The Campus in Sonipat focuses on Executive and Faculty Development programs for the engineering and technical colleges of Haryana state,^[11] as well as design and development of advanced technology, incubate more start-ups and promote industry collaboration.



Technology park IIT Delhi at Sonipat campus front view

Facilities include research & development labs set up by corporations jointly with IIT Delhi, business incubators, Impact Lab for Path, a global health innovation hub, a high-end central research facility and a Centre of Excellence in Smart manufacturing, training centres, and convention facilities. It can incubate and house 100 startups with residential facilities.^[12]

Jhajjar campus^[edit]

IITD-Jhajjar campus is located next to the **AIIMS-Delhi's Jhajjar campus** at Badsa village in **Jhajjar district** of Haryana. IIT-Delhi and AIIMS are jointly setting up a biomedical research park at this campus, including a joint PhD supervision program and provision for adjunct faculty. IITD-Jhajjar is funded by the IITD and managed by the *Foundation for Innovation and Technology Transfer (FITT)*.^[13]

Organisation and Administration^[edit]

Governance

[edit]

See also: [Indian Institutes of Technology](#) § [Organisational structure](#)

All IITs follow the same organisational structure, which has the [President of India](#) as a visitor at the top of the hierarchy. Directly under the president is the IIT Council. Under the IIT Council is the board of governors of each IIT. Under the board of governors is the director, who is the chief academic and executive officer of the IIT. Under the director in the organizational structure comes the deputy director. Under the director and the deputy director, come the [deans](#), heads of departments, and registrar.



Lecture Hall Complex (LHC) of IIT Delhi

Externally funded schools

[edit]

IIT Delhi has four externally funded schools functioning as a part of the institute:^[14]

- Bharti School of Telecommunication Technology and Management
- Amar Nath and Shashi Khosla School of Information Technology
- Kusuma School of Biological Sciences
- Centre of Excellence in Cyber Systems and Information Assurance
- School of Public Policy
- School of Artificial Intelligence
- School of Interdisciplinary Research



Kusuma School of Biological Sciences (KSBS) IIT Delhi



Main building view from the central library



Technology park IIT Delhi main campus



View of the main building from lecture hall complex

Academics[edit]

IIT Delhi offers [Bachelor of Technology](#) programs in various fields as well as dual degree B.Tech. - M.Tech. programs. Admission to these programs is done through [Joint Entrance Examination – Advanced](#).^[15]

IIT Delhi also offers postgraduate programs awarding M.Tech. (by coursework), M.S. (by research), M.Sc., M. Des., MBA (DMS Delhi) under various departments and centres. The admission to the M.Tech. program is carried out mainly based on [Graduate Aptitude Test in Engineering](#) (GATE). M.Des (Master of Design) admissions are through [Common Entrance Examination for Design](#) (CEED), M.Sc. admissions are through [Joint Admission Test for Masters \(JAM\)](#) and MBA admissions are through [Common Admission Test \(CAT\)](#).^{[16][17]}

In March 2018, IIT Delhi formally inaugurated a new Department of Design to bolster Research and Education on Design. The 25-year-old design course was earlier functioning under the ambit of IDDC (Instrument Design and Development Centre). IIT Delhi will be starting the B.Des (Bachelor of Design) program in the academic year 2022–2023.



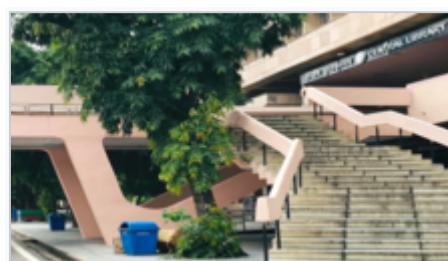
Nalanda apartments at IIT Delhi



Girnar boys hostel IIT Delhi



Zanskar boys hostel IIT Delhi



Entrance of Central Library, IITD

Rankings[edit]

[University and college rankings](#)

General – international

ARWU (2022)^[18] 701–800

QS (World) (2023)^[19] 174

QS (Asia) (2023)^[20] 46

General – India

NIRF (Overall) (2023)^[21] 3

NIRF (Research) (2023)^[22] 3

QS (India) (2020)^[23] 3

Engineering – India

NIRF (2023)^[24] 2

India Today (2022)^[25] 1

Government colleges:

Outlook India (2022)^[26] 2

Business/Management – India

NIRF (2023)^[27] 5

Internationally, IIT Delhi was ranked 174 in the world by the [QS World University Rankings](#) of 2023^[19] and 46 in Asia.^[20] It was ranked in the 701–800 band in the [Academic Ranking of World Universities](#) ranking in 2022.^[18] In 2006, Times Higher Education (THE) ranked all Indian Institutes of Technology as Number 3 in their top 100 best technology universities in the world list.^[28]

IIT Delhi was also ranked 3rd in the overall category,^[21] 3rd among research institutions,^[22] 2nd among engineering colleges^[24] and 5th among management schools^[27] in India by the [National Institutional Ranking Framework](#) (NIRF) in 2023. [Outlook India](#) ranked IIT Delhi 2nd among government engineering colleges.^[26] in 2022. IIT Delhi was ranked third in the [QS India Rankings](#) of 2020.^[23] In, [India Today](#) Best Engineering Colleges 2022, IIT Delhi was ranked 1st.^[25]

Student life^[edit]

Cultural and non-academic activities^[edit]

The institute organises its annual cultural fest [Rendezvous](#), originally started in 1976. It is a four-day-long event held in October every year. In the 2019 version, Rendezvous hosted 280+ events, 15,000+ participants and 200+ artists from more than 25 countries.

Tryst, a technical fest organised by the student community of IIT Delhi is North India's largest science, technological and management festival. With 75+ events, Tryst attracts nearly 40,000+ students all across the nation.^[29]

Office of Career Services^[edit]

The Office of Career Services (OCS),^[30] previously known as the Training and Placement (T&P) Unit, had the primary aim of helping students to find a job upon graduation. Its role has evolved with OCS focusing on year-round activities to provide career counselling, interview preparation and talks to expose students to the multitude of opportunities available.

Student bodies^[edit]

There are several student bodies at IIT Delhi, each with its own set of responsibilities. The highest student body at IIT Delhi is the Student Affairs Council (SAC).

Student Affairs Council (SAC)^[edit]

The Students Affairs Council is the apex student body of IIT-Delhi. The primary objective of SAC is to look after all the issues/problems concerning the students of IIT Delhi. The administrative decisions related to student affairs and infrastructure-related issues are also addressed by SAC. The grievances and suggestions of the students are directed to the concerned administration for redressal through the SAC framework. SAC consists of the various boards of IIT Delhi and other committees.^[31]

Board for Student Welfare (BSW)[\[edit\]](#)

As the name suggests BSW works for the welfare of all the students of IITD. The BSW shall organize welfare activities from time to time and look into other aspects of student welfare. The BSW shall provide financial aid to needy students as per the decided rules.^[32] BSW has the responsibility of organising [Speranza](#), the annual youth festival of IIT Delhi.

The board monitors the sports domain of the institute. It is responsible for maintaining the sports grounds of different sports, conducting Inter Hostel sports competitions, and ensuring and managing the participation of IIT Delhi in Inter IIT Sports Meet (the annual sports event of all the IITs). Apart from this, BSA is also responsible for conducting Sporetech, the annual Sports Festival of IIT Delhi.^[33]

The other student council is the Co-curricular and Academic Interaction Council (CAIC).^[34] which deals with the academic and co-curricular activities of the students. There are 45 student representatives to the CAIC: 22 from the UG students and 23 from the PG students, apart from 2 representatives from each co-curricular body. The co-curricular activities under the CAIC are:

- Robotics Club
- Entrepreneurship Development Cell
- Technocracy (consisting of Astronomy Club, Economics Club, Electronics Club, and Tech Workshops)
- Automobile Club (consisting of Formula SAE, Mini Baja, and HPV)

The annual technical festival of IIT Delhi, Tryst is organised by the CAIC.

Technical organisations[\[edit\]](#)

ACM Student Chapter[\[edit\]](#)

The [Association for Computing Machinery](#) is an educational and scientific society that works with the motto of "Advancing Computing as a Science and Profession". The IIT Delhi Student Chapter^[35] of the ACM was established in 2002 to address the needs of the IIT Delhi computing community. The goal of the chapter is to create interest among the students in computer science, apart from what they learn during the course work. The chapter organises workshops and talks on different subjects by speakers who are well-known in their area. These talks give students opportunities to learn about advanced research subjects. Apart from these, some non-technical activities are also organised. The IIT Delhi Chapter won the ACM Student Chapter Excellence Award^[36] for its Outstanding Activities during 2009–10. In 2012, the team of Rudradev Basak, Nikhil Garg, and Pradeep Mathias of IIT Delhi, achieved India's best rank at the ACM ICPC World Finals, by finishing 18th^[37]

Technology Business Incubation Unit (TBIU), IIT Delhi[\[edit\]](#)

The Technology Business Incubator Unit (TBIU) is the incubation cell at IIT Delhi. It has been in active operation in the institute since the year 2000. The objective of the TBIU is primarily to promote partnerships with new technology entrepreneurs and start-up companies. Every year, startups are selected into the incubation program and provided support to create innovative technology companies.^[38]

Notable alumni

Main article: [List of IIT Delhi people](#)

- [Sachin Bansal](#)
- [Raghuram Rajan](#)
- [Vinod Khosla](#)
- [Chetan Bhagat](#)
- [Acharya Prashant](#)
- [Kiran Bedi](#)
- [Amit Lodha](#)
- [Nitin Seth](#)

Indian Institute of Technology Roorkee (abbreviated **IIT Roorkee**) is a technical university located in **Roorkee, Uttarakhand, India**. It is the oldest engineering institution in India,^[3] and was founded as the **College of Civil Engineering** in **British India** in 1847 by the **Lieutenant-Governor** of the **North-Western Provinces**, **James Thomason**, in order to train officers and surveyors employed in the construction of the **Ganges Canal**.^[4] In 1854 , after the completion of the canal and Thomason's death, it was renamed the **Thomason College of Civil Engineering** by **Proby Cautley**, the designer and **projector** of the canal.^{[5][6]} It was renamed **University of Roorkee** in 1949, and again renamed IIT Roorkee in 2001. The institution has 22 academic departments covering **Engineering, Applied Sciences, Humanities & Social Sciences** and **Management** programs with an emphasis on scientific and technological education and research.^[7]

History[edit]



The Thomason College of Engineering was founded in 1847 to help train engineers for the construction of the **Ganges Canal**. The Canal Engineer's Bungalow lies within the campus of IIT Roorkee.

The institution was founded in 1847 by **James Thomason**, the Lieutenant-Governor of the **North-Western Provinces** (in which Roorkee then lay) to aid engineers and surveyors at work in the construction of the **Ganges Canal**. It offered instruction catered to a variety of students; this included an engineering class for the domiciled British and some Indians; an upper subordinates class for British noncommissioned officers; and a lower subordinates class for Indian surveyors. By the mid-1880s, "the school has a hundred students, substantial buildings, and a reputation as an important center for the study of hydraulic engineering."^{[4][3][6]}

An Electrical Engineering department was added in 1897.^[8] The architecture department instituted a master's degree course in Architecture (M. Arch.) in 1969–70.^[9]

In 1978, the Institute of Paper Technology, Saharanpur was merged with the then University of Roorkee. The Institute of Paper Technology was established as School of Paper Technology by the Government of India in 1964, with an aid from the Royal Swedish Government. The school was renamed as the Institute of Paper Technology in July 1968 and subsequently Department of Paper Technology in July 1992.^[10]

The first edition of **Thomso**, the institute's annual cultural festival was held in 1982. In 1997 the government of India released a stamp dedicated to 150th anniversary of university of Roorkee.

On 21 September 2001, an ordinance issued by the **Government of India** declared it as the nation's seventh Indian Institute of Technology, renaming it to the current name, Indian Institute of

Technology Roorkee. The ordinance was converted into an act by the [Parliament](#) to make IIT Roorkee an "Institution of National Importance".^[11]

To mark the institute's 175th anniversary in 2022, the central government issued a Rs 175 coin as a gesture of commemoration.^[12]

Campus

[\[edit\]](#)



St. John's Church, Roorkee Campus

The main campus in Roorkee has an area of 365 acres (1,480,000 m²).^[13]

IIT Roorkee has a separate campus of 25 acres (100,000 m²) in [Saharanpur](#) which offers courses in Polymer Science, Process Engineering, Paper Technology & Packaging Technology, Applied Mathematics and Scientific Computing.^[13] In addition to this, a new ten-acre campus has been established in [Greater Noida](#), Knowledge Park II, which was inaugurated on 4 April 2011. The Noida extension centre has 16 lecture rooms, software laboratories, faculty offices, a library and a computer center.^[14]

Most students live in the hostels, where extracurricular activities complement the academic routine. The campus has 16 hostels, of which two (Sarojini, Kasturba) are occupied by girls.^[15]

The campus has a new co-ed hostel, Vigyan Kunj.^[16] A new hostel for female students, the Himalaya Bhawan, was recently constructed. Hostels may accommodate undergraduate and graduate students along with doctoral students. Students are assigned to hostels by the school administration after their freshmen year. There are nine hostels for married students, doctoral students and foreign students. Each bhawan has a mess. Mess administration consists of a staff advisor, a chief advisor, and a student mess secretary.

Organization and administration

[\[edit\]](#)

Governance

[\[edit\]](#)

See also: [Indian Institutes of Technology § Organisational structure](#)



View of IIT Roorkee Admin Building.

All IITs follow the same organization structure which has [President of India](#) as visitor at the top of the hierarchy. Directly under the president is the IIT Council. Under the IIT Council is the board of governors of each IIT. Under the board of governors is the director, who is the chief academic and executive officer of the IIT. Under the director, in the organizational structure, comes the deputy director. Under the director and the deputy director, come the [deans](#), heads of departments, registrar. [\[17\]](#)

Departments and Centers[\[edit\]](#)

IIT ROORKEE in the country having the largest number of academic units. It has 21 academic departments covering [engineering](#), [applied sciences](#), [humanities & social sciences](#), and [management](#) programmes, 1 academic center, 3 centers of excellence, 5 academic service centers and 3 supporting units. [\[18\]](#)



Department of Architecture & Planning



Inner courtyard of Department of Architecture & Planning

- **Departments**

- **Engineering and Applied Sciences**

- Architecture and Planning
 - Applied Science and Engineering
 - Biosciences and Bioengineering
 - Chemical Engineering
 - Chemistry
 - Civil Engineering^[19]
 - Computer Science and Engineering
 - Earthquake Engineering
 - Earth Sciences
 - Electrical Engineering
 - Electronics and Communication Engineering
 - Humanities and Social Sciences
 - Hydrology
 - Hydro and Renewable Energy
 - Management Studies
 - Mathematics
 - Mechanical and Industrial Engineering
 - Metallurgical and Materials Engineering
 - Paper Technology
 - Polymer and Process Engineering
 - Physics
 - Water Resources Development and Management

- **Sciences**

- Physics
 - Chemistry
 - Mathematics

- **Business**

- Management Studies

- **Humanities**

- Humanities and Social Sciences



Computer Centre

- **Centers**

- Centre of Excellence
 - Centre of Nanotechnology
 - Centre for Transportation Systems (CTRANS)
 - Centre of Excellence in Disaster Mitigation & Management (CoEDMM)
- Academic Service centers
 - Mahatma Gandhi Central Library
 - Centre of Nanotechnology
 - Centre for Transportation Systems
 - Centre of Excellence in Disaster Mitigation & Management
 - Continuing Education Centre
 - Institute Computer Centre
 - Institute Instrumentation Centre
 - Intellectual Property Rights Cell
 - Quality Improvement Programme
- Supporting Service Centers
 - Educational Technology Cell
 - Institute Hospital

Academics[edit]

IIT Roorkee offers academic programmes in Engineering, Technology, Applied Sciences, and Management. It runs eleven undergraduate (UG), one integrated dual degree, sixty one postgraduate (PG) and several doctoral programmes. ^[20]

The institute admits students to [B.Tech.](#), [B.Arch.](#) and integrated [M.Sc.](#) integrated [M.Tech](#) courses through the [Joint Entrance Examination](#) (JEE) conducted at centers all over India. Before being converted into an IIT, the university selected students through the Roorkee Entrance Exam (REE) conducted on an All-India level. The selectivity of REE was close to 0.25%. After IIT-JEE, it was considered to be the second toughest engineering entrance examination in India. ^[21] Admission to PG programmes in engineering and architecture is on the basis of [GATE](#) score and/or a written test and interview. For PG programmes in fundamental sciences admission is based on the [Joint Admission Test \(JAM\)](#). ^[22]

Along with the engineering courses, the institute offers a two-year residential MBA program for which the admissions, starting from 2011, will be done on the basis of [Common Admission Test](#), thus replacing [Joint Management Entrance Test \(JMEL\)](#) previously conducted by the IITs. ^[23] The institute also offered an interdisciplinary program in computer applications leading to a degree in [Master of computer applications](#) (MCA). The MCA program was a three-year course and admission for the course was through JAM. This programme has been discontinued.

According to statistics published by institute in 2007–08 4137 students were enrolled in the institute across all programs. The student-to-academic-staff ratio was 2.6:1 and that of UG/PG students was 1.4:1. ^[24]

Rankings[edit]

University and college rankings

General – international

[ARWU](#) (2022)^[25] 701-800

[QS](#) (World) (2023)^[26] 369

[QS](#) (Asia) (2023)^[27] 114

General – India

[NIRF](#) (Overall) (2022)^[28] 7

[NIRF](#) (Research) (2022)^[29] 8

Engineering – India

[NIRF](#) (2022)^[30] 6

[NIRF](#) (2023)^[31] 5

Business/Management – India

[NIRF](#) (2022)^[32] 19

Architecture – India

[NIRF](#) (2022)^[33] 1

Internationally, IIT Roorkee was ranked 369 in the [QS World University Rankings](#) of 2023^[26] and 114 in Asia.^[27] It was ranked 701–800 in the [Academic Ranking of World Universities](#) of 2022.^[25]

IIT Roorkee ranked first, with a score of 83.21 among the Indian Architecture colleges according to NIRF 2023. It ranked fifth among engineering colleges with a score of 75.64 by the [National Institutional Ranking Framework](#) in 2023 and eighth overall with a score of 71.66.^[34]

University and college rankings

General – international

[ARWU](#) (2022)^[25] 701-800

[QS](#) (World) (2023)^[26] 369

[QS](#) (Asia) (2023)^[27] 114

General – India

[NIRF](#) (Overall) (2022)^[28] 7

[NIRF](#) (Research) (2022)^[29] 8

Engineering – India

[NIRF](#) (2022)^[30] 6

[NIRF](#) (2023)^[31] 5

Business/Management – India

Architecture – India

The Department of Management Studies ranked 19th with a score of 61.76 among management schools in India by the *National Institutional Ranking Framework* in 2022.^[32]

Library^[edit]



Mahatma Gandhi Central Library

An ISO 9001:2008 certified academic service centre in 2015, The Mahatma Gandhi Central Library finds a unique place in the academic spectrum of the institute. Started in 1848 with a few hundred donated books, its collection has grown to more than 3,50,000 documents in all media. The library contains rare manuscripts including a [1623 edition of William Shakespeare's](#) complete works.^{[35][36]} Providing information through e-resources is the main focus of the Library. It has around 90,000 sq ft of fully air-conditioned space. It can accommodate more than 500 readers at any point of time. The library building is WiFi enabled and contains a total 75 user terminals, dedicated for readers. It also contains an 80-seater open reading room.^[37]

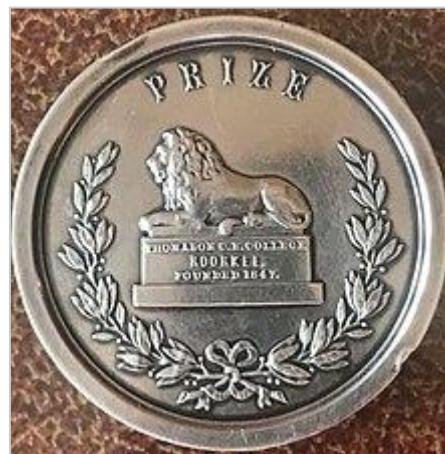
Research^[edit]

Research activities at the institute are conducted at either the department level or under the central office of Sponsored Research and Industrial Consultancy (SRIC).^[38] Major research funding was awarded by several ministries and departments of the Government of India, including the [Ministry of Communications and Information Technology \(India\)](#), [Ministry of New and Renewable Energy](#) and others. Apart from these, a number of major research organizations who have awarded projects to IIT Roorkee include the [Council of Scientific and Industrial Research](#), [Indian Space Research Organisation](#) and others.^[39] The State Emergency Operation Centre(SEOC) in Dehradun is planning to soon link data centre of an earthquake early warning

system developed by IIT Roorkee with the State Emergency Operation Centre (SEOCC) in Dehradun which would come as a great recognition for the establishment.^[40]

Academic collaboration^[edit]

IIT Roorkee's contribution towards the international community in science and technology include the courses and training programs run for developing countries. Every year students from more than 50 countries join IIT Roorkee for full-time or short-term training courses. In 1955 the department of Water Resources Development and Management (WRDM) was established as an Asian African Centre to honour India's commitment at the [Asian African Conference](#) held in Bandung.^[41] WRDM and the Department of Hydrology run special postgraduate programmes for students of the Afro Asian region. The department has so far trained over 2469 in service engineers and agricultural scientists from 48 countries including India.^[41] The courses offered by the Department of Hydrology are presently sponsored by the Government of India and the UNESCO.^[42] In 2008 IIT Roorkee tied up with Google for academic collaboration and curriculum development on emerging technologies and digital landscape led by [Siddhartha Paul Tiwari](#).^[43] Research organizations in India which have a MOU with IIT Roorkee include [Indian Institute of Petroleum](#), Dehradun; [Department of Atomic Energy \(DAE\)](#), Mumbai; [Intel Technology India Pvt. Ltd.](#); [Aryabhatta Research Institute of Observational Sciences \(ARIES\)](#), Nainital among others.^[44]



The Sullivan Memorial Silver Medal, weight around 100 g : Awarded to Sri Jai Rai in 1920 for best student in mechanics in the lower subordinate class.

Scholarships and Prizes^[45]

Types of Awards and Scholarships

1. Non-Convocation Awards/Scholarship: These awards and scholarship are given to current students of various classes. Mostly these awards are based on criteria decided by donors.

- Type A1 Based on Academic Performance.
- Type A2 Based on Various Other Achievements.

2. Convocation Awards/Scholarship: These awards and scholarship are distributed during convocation ceremony to the graduating students. Some of these awards are given on the basis of academic performance while many are given on different criteria proposed by donors.

- Type A1 Based on Academic Performance.
- Type A2 Based on Academic Performance and other various activities.

3. Merit-cum-Means Scholarship: MCM scholarship is given to those students who are meritorious but financially constraint.

Student life[edit]

Cultural festivals[edit]

Students conduct four fests every year: Cognizance^[46] (technical festival), Thomso (cultural festival), Sangram (sports festival) and National Social Summit^[47] (social festival).

Student groups and clubs[edit]

Student groups on the campus include STIFKI (Student Teacher Interaction Forum for Knowledge and Innovation), IMG (Information Management Group), SDSLabs (Software Development Section Labs), GIL^[48] (Group for Interactive Learning), EDC (Entrepreneurship Development Cell), HEC (Himalayan Explorers' Club), Literary Society (Active involvement in debating and quizzing), a local chapter of ShARE, Spic Macay in addition to student chapters of technical societies such as AAPG, SEG, SPG, ASME (American Society of Mechanical Engineers, IIT Roorkee Student Section), SAE, IEEE, IIChE (Indian Institute of Chemical Engineers), etc. The Cultural Society (dramatics, music, choreography, cinematic, literary, IIT Heartbeat(Official inter-IIT magazine)^[49]), audio, lights, Programme management, Kshitij, Geek Gazette(technical magazine of IIT Roorkee)^[50] Watch Out (the Official News Magazine of IIT Roorkee)^[51] takes all initiative related to cultural activities in the institute. It organizes music concerts, dance shows, dramas and quiz competitions. ^[52] National Service Scheme at IIT Roorkee is headed by Dean of Students Welfare, IIT Roorkee. As of 2014, NSS, IIT Roorkee has over 700 active members from different disciplines, participating and organizing various community and social service activities.^[53]

IIT Roorkee has a hobbies club, one of its kind among IITs. It aims at facilitating activities like photography, philately, astronomy, fine arts, gardening, web design, etc. It is headed by a chief advisor, who is supported by two deputy chief advisors and a council secretary. It hosts SRISHTI, an annual techno-hobby exhibition.^[54]

Team Robocon, is the official undergraduate student competitive robotics team of IIT Roorkee. It was founded in 2009 by some robotic enthusiasts alumni. This team annually participates in ABU Robocon Competition. The team has won multiple awards in the past like the "Best Innovative Design Award" in 2018 and the "Judges Special Award" in 2019. The team has achieved AIR-5 in 2016, AIR-7 in 2018, and AIR-6 in 2019. Their aim is to win the national competition by making the best robot and represent India in the corresponding international event.

IIT Roorkee Motorsports is the official Formula Student team of IIT Roorkee. It was founded in August 2010. The team designed and developed a formula style race car and represented India in the international competition [Formula SAE](#) Australasia in December 2011, held in Melbourne, Australia. This was the first Indian team to finish the endurance event of the competition and also finished first in fuel efficiency^[citation needed]. The team also enjoys the rare feat of displaying their student-made race car at [Auto Expo](#) 2012. After a successful international debut, the team has plans to develop a series hybrid vehicle and participate in the [Formula Student](#) UK 2013.

The institute hosted the inception of [SPIC MACAY](#) Winter Convention. A cultural and classical program in which students from school and colleges from all over the country collaborated which was held from 13 to 16 December 2015. Aman Jakar was the overall convener of the event.

Commemoration[edit]

The 150th anniversary of the institution was commemorated in a stamp issued by the Government of India in 1997. In 2022, its 175th anniversary was commemorated by a coin.^[citation needed]



A 1997 stamp dedicated to the 150th anniversary of the University of Roorkee.



A 2022 coin dedicated to the 175th anniversary of IIT Roorkee.

Alumni[edit]

IIT Roorkee has produced many alumni who played important roles in the technological development of India and made significant impact on corporate world. According to IIT Roorkee's website, ten alumni have won [Padma awards](#) and 25 have been [Shanti Swarup Bhatnagar Prize for Science and Technology](#) awardees. The institute has produced seven chairmen of the [Indian Railway Board](#), chairman of the [Telecom Regulatory Authority of India](#), chief of [Delhi Metro Rail](#)

Corporation, more than a hundred secretary-level officers in the Government of India, two presidents of the [Confederation of Indian Industry](#), six directors of IITs, and presidents of bodies related to engineers and scientists like the [Indian Institution of Engineers](#), the [Indian National Science Academy](#) and the [Indian National Academy of Engineering](#).^[55]

Notable alumni[edit]

Main article: [List of Indian Institute of Technology Roorkee people](#)

Alumni association[edit]

The IIT Roorkee Alumni Association was established and registered in 1940 as a society under the Society Registration Act. The association has 31 local chapters in the country and three chapters abroad.^[55] The association encourages the alumni to take interest in the activities of the alma mater and promotes relations between alumni.

Every year the association hosts Diamond, Golden and Silver jubilee functions, where alumni graduating 60, 50 and 25 years earlier are invited. Since 2005 the association has also been awarding a Distinguished Alumni Award to alumni who have made immense contributions in the fields of Academic/Research, Social Sciences, Engineering & Public Administration, Corporate Development/Entrepreneurship and Service to the Society.^[56]

The Student Alumni Mentorship Programme has been initiated by the association to help young students in achieving their career aspirations. The alumni visit the institute to interact with the students and staff and share their suggestions.

Indian Institute of Technology Roorkee

Type of the institute:	Indian Institute of Technology
Complete Mailing Address:	Indian Institute of Technology Roorkee Roorkee Haridwar-247667 Uttarakhand India
Contact Person For Admission:	Assistant Registrar (AAO)

Designation:	Assistant Registrar
Email:	admreg@iitr.ac.in
Alternate Email:	
Phone Nos:	01332-284289
Fax No:	
Mobile No.:	

About the Institute

Indian Institute of Technology Roorkee is one of the leading Institutes of National Importance in higher technological education and in basic and applied research. Since its establishment, the Institute has played a vital role in providing technical manpower and know-how to the country. It's contributions in cutting edge research in Science, Technology, Architecture, Management and Humanities & Social Sciences are globally revered. The Institute ranks amongst the best technological institutions in the world and has influenced all sectors of technological development. It has also been considered a trend-setter in the area of education and research in the fields mentioned above.

The Institute has completed 175 years of glorious existence. The Government of India declared it as the seventh Indian Institute of Technology of the country on September 21, 2001.

The Institute offers Bachelor's Degree courses in twelve disciplines of Engineering and Architecture, two Integrated Masters (IMT) programmes in Technology and four BS-MS 5-year (4+1) dual degree programmes in Sciences and Economics apart from 59 Postgraduate courses in various disciplines of Engineering, Applied Science, Architecture and Planning, Design, Management and Humanities & Social Sciences. The Institute offers doctoral degree in all Departments, Centres and School. The Institute also offers under graduate courses in Artificial Intelligence and Data Sciences under the Mehta Family School of Data Science and Artificial Intelligence.

The Institute admits students to B. Arch., B. Tech., IMT, BS-MS courses through the Joint Entrance Examination - JEE (Advanced).

Vision:

“To attain global level of excellence in education and to create a sustainable and equitable society through innovative research in science and technology.”

Mission:

To create an environment that shall foster the growth of intellectually capable, innovative and entrepreneurial professionals, who shall contribute to the growth of Science and Technology in partnership with industry and develop and harness it for the welfare of the nation and mankind.

Core Values:

- § Academic integrity and accountability
- § Respect and tolerance for the views of every individual
- § Attention to issues of national relevance as well as of global concern
- § Holistic understanding, including knowledge of the human sciences
- § Appreciation of intellectual excellence and creativity
- § An unfettered spirit of learning exploration, rationality and enterprise
- § Sensitivity to social responsibilities

IMPORTANT CONTACTS :

Contact Person for Admission-Registration: Assistant Registrar (AAO)

Designation: Assistant Registrar

Email: admreg@iitr.ac.in

Alternate Email: N/A

Phone Nos: 01332-284289/4010

Contact Person for Fee Structure: Mr. Anil Kumar

Designation: Project Assistant (Admin)

Email: dsw2@iitr.ac.in

Alternate Email: NA

Phone No.: 01332-284239

Contact Person for Fee Deposit: Shri Dinesh Chandra Vaish

Designation: Jr. Supdt.

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Phone No.: 01332-284222

Contact Person for Faculty related information: Assistant Registrar (Faculty Recruitment)

Designation: Assistant Registrar

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Contact Person for Hostels: Mr. Rohit Kumar

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Contact Person for Scholarship/Medals and Financial Assistance: Dr. Dheeraj Kumar Khatod

Designation: Chairperson, SCSP

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Alternate Email: awards@iitr.ac.in

Phone No.: 01332-284750 / 01332-285750

Contact Person for Placement: Prof. Kaushik Pal

Designation: Professor-in-Charge, Placement and Internship Cell

Email: placement@iitr.ac.in

Alternate Email: profinchargepic@iitr.ac.in

Phone No.: 01332-285260, 285960

For more details, please visit: <https://www.iitr.ac.in/>

Fee Structure

FEE STRUCTURE (all figures in INR)

APPLICABLE TO 2023-24 BATCH

B.Tech./ B.Arch. /BS-MS/ Int. M.Tech. I Year & Preparatory Course		
	Autumn	Spring
I. Semester Fees (To be paid every Semester)	1	2
1. Institute Fees		
(a) Tuition Fees – Gen/OBC	100000	100000
(b) Tuition Fees – SC/ST/PD (Not chargeable)	0	0
(c) Tuition Fees for the most economically backward students (whose family income is less than Rs. 1 lakh per annum)	0	0
(d) Tuition Fees for the other economically backward students (whose family income is between Rs. 1 lakh to Rs. 5 lakhs per annum) after remission of 2/3rd of the fee	33333	33333
2. Semester charges		

(a) Student Establishment & Maintenance (non-refundable)	7000	7000
(b) Medical Insurance	750	750
(c) Career Development Cell (CDC)	300	300
(d) Miscellaneous	2500	2500
Total (a+b+c+d)	10550	10550
 3. Hostel Charges (Per Semester)		
(a) Accommodation	5000	5000
(b) Electricity*	2500	2500
Total (a+b)	7500	7500
 II. One-time payments at the Time of Admission	6000	0
 III. Industrial Tour	0	0
 IV. Deposits (Refundable)		
(a) Institute Caution Deposit	1000	0
(b) Library Deposit	2000	0

	Total (a+b)	3000	0
V. Mess Charges			
(a) Mess Advance towards Food Charges**	20250	20250	
(b) One Time Mess Admission Fee (nonrefundable)	4000	0	
(c) Mess Security (Refundable)	2000	0	
	Total (a+b+c)	26250	20250
	Grand Total for Gen/OBC	153300	138300
	Grand Total for SC/ST/PD	53300	38300
Grand Total for the most economically backward students (whose family income is less than Rs. 1 lakh per annum)	53300	38300	
Grand Total for the other economically backward students (whose family income is between Rs. 1 lakh to Rs. 5 lakh per annum) after remission of 2/3rd of the fee	86633	71633	
NOTE:			
1. * This is the minimum charge for Bachelor Hostel. For married accommodation charges will be as per actual.			
2. ** Mess Advance towards food charges is subject to adjustment as per actual.			

3. Candidates admitted under EWS have to pay fee according to their respective categories i.e. General/OBC/SC/ST/PD.

Note: The process of finalizing the fee structure is underway and may be finalized by 09-06-2023.

Academic Structure

Academic Information

The Institute offers Undergraduate, Postgraduate and Ph.D. programs across various departments, centres and school. The undergraduate programs include

1. Bachelor of Architecture (B. Arch.)
2. Bachelor of Technology (B. Tech.)
3. Integrated Master of Technology in Geophysical Technology and Geological Technology offered by the Department of Earth Sciences.
4. Five year BS-MS.

Five year BS-MS programme is with an exit option after four years with a BS degree.

The program is available in four disciplines:

- (i) BS-MS (Mathematics and Computing) offered by the Department of Mathematics.
- (ii) BS-MS (Physics) offered by the Department of Physics.
- (iii) BS-MS (Chemical Sciences) offered by the Department of Chemistry.
- (iv) BS-MS (Economics) offered by the Department of Humanities & Social Sciences.

KEY FEATURES OF NEW UG CURRICULUM:

New UG Curriculum

The Institute has revamped its Under Graduation curriculum w.e.f. session 2023-24 with the aim to make students future ready with their global aspirations.

The institute introduces innovative concepts which make its curriculum nation's pride such as courses on Artificial Intelligence and Machine Learning (AI/ML), Data Science, Indian Knowledge System (IKS), Tinkering and Mentoring, Talent Enhancement Basket (TEB), Entrepreneurship, Environmental Science and Sustainability Course (ESSC), Community

Outreach (CORE), Soft Skills, Theme bases Minor Specialization, Design thinking based project and many more.

The curriculum has been exclusively framed while keeping the NEP 2020 as reference with the purpose to reduce the lag between education and global industrial demands.

The Students will also have the opportunity to study selected courses from selected globally reputed universities while being in IIT Roorkee.

Theme Based Minor Specialization Courses

A student desirous of excelling in some specialization other than her/his own department may earn required credits by completing the specified courses in the specialization area in another department. These students are given Degree his/her parent engineering area with Minor Specialization in another area. For example, an Engineering Physics student can earn a Minor Specialization in Electronics and Communication, and/or a Production and Industrial Engineering student can earn a Minor Specialization in Economics.

Semester Exchange and B. Tech. Project/Internship/Entrepreneurship Outside IIT Roorkee

There are provisions for the UG students to go to some selected Universities/Institutions under Semester Exchange Program and/or to carry out their B. Tech. projects/internship/entrepreneurship outside IIT Roorkee.

For more details on academic information and programs, please visit:

<https://acad.iitr.ac.in/Varsity/UGProgrammes.html>

<https://iitr.ac.in/Academics/Home.html>

ACADEMIC CALENDAR & IMPORTANT DATES:

The Institute follows an academic calendar for its functionality. The calendar is available at:
https://iitr.ac.in/Academics/static/Calendar/For_all_other_than_MBA_Autumn_2023-24.pdf

Few Important Dates:

Particular	Date(s)
Fee Payment (tentative)	July 26 - 30, 2023

Date of Registration	August 01, 2023, Convocation Hall, IIT Roorkee
Commencement of Classes	August 02, 2023
Orientation Programme	August 05, 2023

PROVISION FOR HIGHER STUDIES:

Switchover to M.Tech. & IDD programmes

Students who joined for a B. Tech. program can also opt to switch over:

- i. M.Tech. programmes whose eligibility criteria is satisfied by the M.Tech. branch. The conversion would require a minimum CGPA of 7.5 at the end of 3rd year and the consent of the DAPCs of the concerned Departments.
- ii. On successful completion of the programme, the students will get corresponding B.Tech. and M.Tech. degrees under the Integrated Dual Degree (IDD) Programmes.

Admission to Ph.D. programme

The candidates who fulfill the following eligibility criteria can also apply for Ph.D. programme:

1. Bachelors or Masters from IITs with a CGPA 8.0 and above on 10 scale point scale are exempted from the requirement of GATE / GPAT / JRF /NET.

B. Tech. / B. Arch. / B. Pharm degree or equivalent from Centrally Funded Technical Institute (CFTIs) with a GATE / GPAT/NET score (marks) and a minimum CGPA of 7.0 on a 10 point scale or 70% marks, irrespective of the category.

Rules For Change Branch

The Institute provides opportunity for branch change to students who are admitted through JEE (Advanced) except those admitted to B.Arch. Programme at the end of the Autumn Semester (First Semester) of the first year provided that the students satisfy the required criteria.

For more details:

<https://acad.iitr.ac.in/Varsity/ACAD/Notifications/Revised%20Guidelines%20on%20Branch%20Change.pdf>

Faculty

IIT Roorkee has 518 faculty members in various disciplines of Science, Technology, Architecture, Management and Humanities & Social Sciences. The basic responsibilities of the faculty are teaching, research, technology development, dissemination and outreach, and industrial interaction. IIT Roorkee faculty also help and mentor other institutes and engineering colleges in developing undergraduate and post graduate course curriculum. A large number of faculty members from engineering colleges across the country are trained every year under Quality Improvement Programme, an initiative of AICTE and other similar programmes of the Government of India. A large number of short-term training programmes for in-service engineers and engineering college teachers are also organized for upgradation and improvement of knowledge and skills.

IIT Roorkee has several multi-disciplinary Departments/Centers/School, some of which are unique in the country. These departments/centers/school provide opportunity for research collaboration between pure and applied sciences and different disciplines of engineering. IIT Roorkee faculty have been actively interacting with the industry through sponsored research and consultancy projects and have played an important role in several large projects of national importance.

IIT Roorkee selects its faculty members through a rigorous process involving screening at Department and Institute levels and an interview by a statutorily constituted selection committee which includes eminent expert members, Head of the concerned department and the Director. The candidates make research presentations in the Departments prior to the interview.

Being the first engineering college in India and among the first few in the world, IIT Roorkee has a rich legacy and takes pride in its traditions and moral values. IIT Roorkee faculty members maintain intense interaction with the students and nurture them to evolve as good citizens in addition to developing their intellectual and academic competence.

Kindly visit the following link:

https://iitr.ac.in/Careers/static/DOFA/2023/Faculty_list_as_on_01062023.pdf

Student Life at Institute

Hostels

Our homes away from home are as modern as they can be. More importantly, these have spawned the cultures that make the campus an unforgettable experience. It's here that

midnight cricket tournaments, community computer warfare and so many other things find expression.

All hostels are now fully Wifi enabled and LAN connected, meaning that the Internet permeates the space the students live in.

For More information, follow the link given below.

<https://www.iitr.ac.in/dosw/pages/Hostel-Management.html>

Boys' Hostels: The Institute has ten boys Hostels:

- Azad Bhawan
- Cautley Bhawan
- Ganga Bhawan
- Govind Bhawan
- Jawahar Bhawan
- Radhakrishnan Bhawan
- Rajendra Bhawan
- Rajiv Bhawan
- Ravindra Bhawan
- Malviya Bhawan

Girls' Hostels: The Institute has the following accommodations for girls:

- Sarojini Bhawan
- Kasturba Bhawan
- Indira Bhawan
- Himalaya Bhawan

Hostels for married students: The Institute also has seven Hostels for married students:

- G.P. Hostel
- M.R. Chopra

- Azad Wing
- D.S. Barrack
- A.N. Khosla House
- K.I.H.
- Vikas Kunj (Q, R, S & T Block)

Co-ed Hostel:

Vigyan Bhawan

Clubs:

- U.G. Club
- PG Club
- Alaknanda Club

Sports:

- Badminton
- Athletics
- Rowing
- Tennis
- Swimming
- Hockey
- Cricket
- Squash
- Gymnastic
- Football
- Basketball
- Yoga
- Volleyball

- Kho Kho
- Table Tennis
- Weight Lifting

Groups:

- [IMG](#)
- UBA
- [Cognizance](#)
- [Geek Gazette](#)
- [HEC](#)
- [NCC](#)
- [NSS](#)
- [SAC](#)
- [ShARE](#)
- [Sanskrit Club](#)
- [Spic Macay](#)

Cultural Council:

- [Dramatics Section](#)
- Choreography Sec.
- Programme Management Section
- [Audio Section](#)
- [Light Section](#)
- [Music Section](#)
- [Literary Section](#)
- [Watch Out](#)
- [Kshitij](#)

- [Cinematic Section](#)

Technical Societies:

- CHESS

- [CEC](#)

- [EDC](#)

- [IEEE](#)

- [EESS](#)

- MIES

- [SAE](#)

- [ASME](#)

- [ACM](#)

- [AWWA](#)

Facilities:

- Cafeteria

- Hangout Places

- Banks

- Post Office

- Aarohi Child Care Centre and Playgroup

- Railway Reservation Counter

- Institute Hospital

- Places of Worship

- Security

Guest Houses:

- Khosla International House (KIH)

- N.C. Nigam Visitors' Hostel

- Faculty Home
- Trainees Officers' Hostel

Wellness Centre:

The institute has one wellness centre that is an open, receptive and safe forum to share any problem of students.

Details are available at : <https://wellness.iitr.ac.in/>

Financial Assistance

AWARDS AND SCHOLARSHIPS:

The Institute has a single window system for all scholarships/awards/prizes and related matters by creating the office of Chairperson, Senate Committee for Scholarships and Prizes (SCSP). SCSP office also provides necessary support to facilitate drawing scholarships from external sources (corporate houses/ Trusts/ employer of parents etc.).

SCHOLARSHIPS:

Currently, the following financial assistance/ scholarships are available to the students of IIT Roorkee.

(1) James Thomason (JT) Scholarship: All UG students, admitted to IIT Roorkee with All India Rank (AIR) in JEE (Advanced) up to 250, are eligible for JT scholarship. Under this scholarship, a UG student will get ₹ 2,50,000/- per year. JT scholarship is awarded for the entire duration of the programme provided the student obtains a CGPA of 8.0 or above at the end of every academic year.

(2) Tuition Fee Waiver: All UG students of General OR General (EWS) OR OBC category are eligible for tuition fee waiver. Under this scheme, students having their family income less than ₹ 1 Lakh per annum will get full tuition fee waiver, while students having their family income between ₹ 1 Lakh to ₹ 5 Lakh per annum will get 2/3rd tuition fee waiver. This scheme is available only for the normal duration of the programme. For dual degree programmes, it is available only up to the 4th year.

(3) Merit cum Means (MCM) Scholarship: All UG students of General OR General (EWS) OR OBC category having their family income up to ₹ 5 Lakh per annum are eligible for MCM scholarship. Under this scholarship, a UG student will get a minimum ₹10,000 per year along with refund of the remaining tuition fee. An M.Sc. student will get a minimum ₹10,000 per year. It is available only for the normal duration of the programme. For dual degree programmes, it is available only up to the 4th year. Further, it is awarded up to 25% of the actual strength of the class. For the fresh students, All India Rank in JEE (Advanced) or JAM will be considered. In subsequent years, their academic performance in the preceding academic year will be considered.

(4) Tuition Fee waiver and Free Messing: All SC/ST/PH students get complete tuition fee waiver. The UG students of SC OR ST category having their family income up to ₹ 5 Lakh per annum are eligible for free messing (only basic menu) and a pocket allowance of ₹ 250/- per month. Such students are also exempted from payment of Hostel Room Rent. In case a student does not seek free messing, he/she gets a pocket allowance of ₹ 1,000/- per month.

(5) DST-INSPIRE Scholarship: A student taking admission in the 5-year Integrated M.Sc. or BS-MS programme can get INSPIRE Scholarship of ₹ 60,000/- per year, provided s/he satisfies the criteria decided by DST. Under this scholarship, awardees are also reimbursed expenses up to ₹ 20,000/- for doing projects in Indian/ foreign institutes which covers cost of travel and other related expenses.

(6) Institute Fellowship for 5th Year students of IDD Programs: A student registered for the 5-year of the IDD programme who has cleared all the course work requirements up to the fourth year of the program and (i) has a CGPA not less than 8.0 without GATE, or (ii) has qualified GATE with at least 5.0 CGPA, is offered scholarship of ₹ 8,000/- per month.

Other scholarships are instituted by donations from individuals, trusts, organizations, PSUs, State Governments and Central Government with a view to provide financial assistance to needy and meritorious students. Announcements of the eligibility and scholarship/assistantship amount, mode of selection, etc. are made time to time.

AWARDS:

The Institute has a large number of awards including medals/cash prizes for excellence in academics, social service, co-curricular activities, and sports. Some of these medals/ prizes are awarded during the annual convocation of the institute.

Some of the notable medals/prizes for graduating students are as follows:

(1) President Gold Medal

Awarded for securing the highest CGPA amongst the B.Tech. / B.Arch. / IDD / Int. M.Sc. / Int. M.Tech. graduating students admitted through JEE (Advanced).

(2) Institute Silver Medal

Awarded for securing the second highest CGPA amongst the B.Tech. / B.Arch. / IDD / Int. M.Sc. / Int. M.Tech. graduating students admitted through JEE (Advanced).

(3) Institute Bronze Medal

Awarded for securing the third highest CGPA amongst the B.Tech. / B.Arch. / IDD / Int. M.Sc. / Int. M.Tech. graduating students admitted through JEE (Advanced).

(4) Director Gold Medal

Awarded for showing the best all-round performance amongst the B.Tech. / B.Arch. / IDD / Int. M.Sc. / Int. M.Tech. graduating students admitted through JEE (Advanced).

(5) Department Gold Medal

Awarded for securing the highest CGPA in each UG programme offered by the department.

(6) Best Project Award

Awarded for the best project in each UG programme offered by the department.

(7) The President of India Dr. Shankar Dayal Sharma Gold Medal

Awarded for excellent contributions in the area of academic and social service amongst the graduating students.

(8) A.K. Goel Green Energy Prize and Gold Medal

Awarded for significant contribution by the graduating students towards green/renewable energy sector. This award carries a cash prize of ₹ 1 Lakh along with a Gold Medal and citation to one deserving student every year.

(9) Professional Development and Innovation Awards

Awarded for professional excellence and innovation amongst technology/architecture students of IIT Roorkee. This award carries the cash prizes of ₹ 1,00,000/- every year.

(10) Hari Krishna Mittal Leadership Award

Awarded for significant contributions by the graduating students towards enhancing the entrepreneurship culture at IIT Roorkee. This award carries a cash prize of ₹ 30,000/- to one deserving student every year.

Other awards, available to UG students during their stay at the campus, are as follows:

- (1) Encore Awards: Total cash prize of ₹ 2,80,000/- on the basis of scholastic performance, cultural, literary accomplishments, sporting proficiency and leadership qualities.
- (2) Nayyar Award for Excellence in Communication: Total cash prize of ₹ 1 Lakh for excellence in communication.
- (3) Manoj Jain Award of Excellence in Human Values: Total cash prize of ₹ 50,000/- for excellence in human values.
- (4) Prabha Nayyar Award for Excellence in Time Management: Total cash prize of ₹ 50,000/- for excellence in time management.
- (5) Harsh Wardhan Bhatnagar Award for Excellence in Leadership: Total cash prize of ₹ 50,000/- for active contribution at Bhawan, Department/Centre or Institute level.

To know more about various other awards, scholarships and prizes, please visit the website:
<https://scsp.iitr.ac.in/>

Training & Placement

The Placement and Internship activities continue to grow under the guidance of Professor-in-Charge, Placement and Internship, IIT Roorkee. A student placement team along with the Placement Cell and Placement Advisory Council (consisting of student representatives from the final year academic programmes and the faculty in-charge from each academic departments/centres) work around the year to look after the smooth execution of

the activities. Under the Campus Recruitment Campaign, companies from all sectors (i.e. Core, IT, FMCG, Oil/Energy, Government, Academics, R&D and Financial etc. and others related to all the streams) are invited for the internships and placement recruitment. The remarkable progress in the placement records over the years is evident in the data and rankings. Every year, there is an increase in the number of companies visiting the campus. Approximately, 400 new companies have been added in the last three years. During the academic year 2022-23, a total of 1233 job offers from 302 recruiting organizations for Placement and 751 internship offers from 133 organizations have been received.

For more information, kindly visit link: <https://www.iitr.ac.in/Placements/pages/index.html>

Industry And Alumni Relations

The alumni of IIT Roorkee (erstwhile University of Roorkee) have contributed immensely to the growth and development of our nation ranging from Infrastructure development to Service sector. Our alumni have occupied very important positions in India and abroad, in the fields of administration, academia, research and engineering services. Many have excelled in entrepreneurship in corporate sectors. Industry-academia interaction with the collaboration of our faculty members, current students and alumni has augmented in taking our labs to the corporate houses and governance. There are thousands of alumni spread all over the world and we constantly strive to nurture and sustain the relationship with them.

The highly enriched alumni of IITR is a link between the past and the present which paves way for the future. Their feedback and inputs are considered seriously by the faculty members of the institute while deciding the research focus on the needs of the country and innovations. They keep contributing for the development of the institute and IIT Roorkee cherishes the warm bond with its alumni. Besides monetary contributions, the alumni have contributed immensely towards enriching the academic resources of the Institute.

IIT Roorkee is the only Institute in India which has seen the test of time before independence, after independence and during the global economic liberation. Spanning over an alumni history of more than 160 years, it has its presence in every aspect of life of global significance. The strength of our alumni is the pride of IIT Roorkee and together we shall endeavor at all times to serve the cause of humanity.

Recreational/Extra Curricular activities

Location and Accessibility

Location:

The Institute is situated on the National Highways 58 and 73 and is on Amritsar-Howrah main rail route. It is 170 kilometres from Delhi, 29 kilometres from Haridwar and 75 kilometres from Dehradun.

By Road:

Traveling from Delhi, the highway NH-58, Roorkee is located towards north approximately 170 kilometers. The city of Haridwar is located further on the same highway about 29 kilometers from Roorkee.

By Air:

The nearest airport to Roorkee is the Dehradun airport at Jolly Grant which has air services from New Delhi. But the most preferable airport from Roorkee is the Indira Gandhi International Airport at new Delhi which is about 180 kilometers away.

By Train:

Roorkee is well connected to Delhi by rail and road. Some trains which are convenient for travelling between Delhi and Roorkee are Vande Bharat, *Shatabdi Express* and *Jan Shatabdi Express*. Other important trains touch Roorkee are:

Indore – Dehradun Express

Ujjain – Dehradun Express

Bombay – Dehradun Express

CLIMATE:

The climate of Roorkee is generally warm and temperate. During the summers, the maximum temperature soars up to 40-43 °C while during the winters, it sometimes falls as low as 1 °C. Mostly the winters are very chilly.