RESEARCH

IIT Gandhinagar

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CAREERS GIVING



The undergraduate programmes of IITGN aim to train students to blaze new paths rather than follow those charted by others. The education we provide aims to prepare a student for a lifetime of continual learning and application of knowledge to real life situations. The curriculum focuses on students' overall development and step-by-step value addition.

IIT Gandhinagar offers 4-year Bachelor of Technology (BTech) programmes in:

- Artificial Intelligence
- Chemical Engineering
- Civil Engineering
- Computer Science & Engineering
- Electrical Engineering
- Materials Engineering
- Mechanical Engineering



In addition, the Institute admits students to the following three BTech-MTech dual degree programmes:

- Computer Science & Engineering
- Electrical Engineering
- 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. For more information about courses and curriculum, click here.

Foundation Programme

Each undergraduate student's journey at IIT Gandhinagar begins with the Institute's flagship Foundation Programme. This 5-week mandatory programme is a dynamic immersion activity that attempts to mold students in a holistic manner and inculcates in them the capabilities to positively contribute towards diverse avenues of life. All students participate in an exciting series of extracurricular activities to build their sense of self-confidence, explore their creative passions, and develop their minds and bodies as well-rounded global citizens. The programme is structured around the following five themes:

- * Values and Ethics: To foster a strong sense of ethical judgment and moral fortitude.
- **Creativity:** To provide channels for nurturing and exhibiting individual creativity through art, craft, music, singing, media, theater and related activities.
- ❖ **Teamwork:** To develop a culture of teamwork and group communication.
- * Social Awareness: To nurture a deeper understanding of the local and global environment, and understand our place as concerned citizens of the World.
- Physical Activities & Sports To engage students in physical activity to ensure healthy physical and mental growth.

The Foundation Programme is an "active learning programme" specifically designed to achieve the above objectives through a number of enriching activities. The sessions may include guest lectures by eminent thought leaders, field visits to heritage sites, discussion sessions on social responsibility, journal writing, team sports, performance-based projects in theater, arts and music, workshops on sketching, painting and clay modeling with master artisans, and much more.

Integrating Liberal Arts

Critical thinking is best promoted when we recognize that technology development is rooted in a social context and appreciate the interdisciplinary character of knowledge. This recognition is reflected in the IITGN curricula that has the largest liberal arts content of any engineering curricula in the country. Among the courses being taught at IITGN include literature and languages (English, Sanskrit, Urdu), Philosophy, Sociology, World Civilisation, Democracy, Indian Heritage, Anthropology, Ancient Indian History, etc., providing a truly rounded education.

Learning by Doing

IITGN emphasizes project based learning both inside and outside the classroom. Hands-on training via course projects, dedicated term project courses, extensive lab work and an emphasis on "learning by doing", enable undergraduates to get their hands dirty, and solve challenging problems of the real world rather than be confined to books, black boards and powerpoints. Equipped with advanced machines, our Tinkerers' Lab and Maker Bhavan allows students the freedom to experiment, exercise imaginations, build novel systems and convert concepts and creative ideas to actual engineering products.

Overseas Research Experience

The Institute places a strong emphasis on undergraduate research. Nearly 40 percent of the 2017 BTech class received overseas opportunities in the world's top institutions and organizations, among the highest in the country. A number of undergraduate students also pursue their research at IITGN itself through the Institute's competitive Summer Research Internship Programme (SRIP). The Institute has a liberal travel support policy to encourage undergraduate students to attend scientific conferences overseas to present their work.

Fellowships

IITGN offers many fellowships to support the students, not just to reward academic achievements, but also promote other interests.

Scholarships at a Glance

The Explorers Fellowship offers a unique annual summer programme which encourages students to discover and appreciate the staggering cultural diversity of India by undertaking a six-week journey across the country on a shoestring budget.

The Gram Fellowship is designed to sensitize students to the rural context divide in the country, this fellowship takes students to rural India. It encourages students to immerse themselves in the experience of living in a village and in the process appreciate and think about technological and non-technological solutions.

Entrepreneurship and Incubation

The entrepreneurship and innovation development programmes at the Institute offer incubatees round the clock access to design software, fabrication facilities and sophisticated laboratories. Courses on incubation and entrepreneurship are taught by serial entrepreneurs, and mentorship is provided by successful businesspersons.

Outcomes and Impact

A large proportion of our under-graduates have gone on to pursue higher education in some of the world's top universities such as CalTech, MIT, Princeton University, University of Texas at Austin, and Stanford University. Our students have found placements in top organizations like Amazon, Adani, Adobe, Barclays, Deloitte, DE Shaw, General Electric, Goldman Sachs, Google, HPCL, IOCL, ISRO, ITC, Johndeere, Mahindra, Nvidia, Oracle, Salesforce, Samsung, Siemens, Tata Group, Texas Instruments.

Substantial numbers have chosen the path of entrepreneurship by incubating innovative ideas for the ends of commercial success and social imperatives. Also, an impressive number of our students have won competitive research grants and fellowships, such as the Wellcome Trust DBT India Alliance, Fulbright-Nehru Scholarship, and the Shastri-Indo Canadian research grant.

Flexibility & Additional Learning Opportunities

IIT Gandhinagar provides a large portfolio of options for additional learning to undergraduate students. We have innovated in many ways to allow students to pursue learning opportunities of their choice. Students can pursue an Honors in their discipline or obtain a Minor in another discipline/domain. Students also have the option to pursue a second bachelors in a different discipline via our double major program. They may convert their BTech programme into a BTech-MTech or a BTech-MSc dual degree programme, and so on.

- Dual-Major Options: BTech students can 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. Minors are currently available in 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.

Branch/Programme Change

We empower students to discover and pursue their passion, with the most liberal branch/programme change policy in the IIT system, offering the opportunity to most students to switch to a discipline/programme of their choice in their second year.

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



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