G **Science Subjects…………………………………………………………………………………………………….**

**3.1Travel and Tourism Management (12 months)**

* 1. **Diploma in Medical laboratory Technology**
  2. **Diploma in Operation Theatre Technology …2 years.**
  3. **Diploma Pharmacy**
  4. **Diploma in Radio Imaging Technology … 2 years**
  5. **Diploma Invasive Cardio Vascular tech. 2-years**
  6. **Diploma in General Nursing and Midwifery (GNM-Nursing)**

**Introduction**

* Nursing is the art of taking care of sick people.
* Midwifery is a profession that provides assistance to a mother during labor and pregnancy.
* Subjects studied under this degree are biological Science, Psychology, Sociology, fundamentals of Nursing and First-aid.

**Duration:** Diploma (general Nursing & Midwifery) is a 3-year course.

**Eligibility:** 10+2 Science

**Institutions/Colleges/universities**

* Malwa College of Nursing, Kotkapura, Punjab
* AIIMS, Delhi
* AFMC, Pune.
* Govt. Medical College Amritsar.
* NIMS University, Jaipur.
* Pt. Bhagwat Dayal Sharma Postgraduate Institute of Medical Science. Rohtak
* Many more Colleges in different States
  1. **Certificate Course in Food Production and Patisserie**
  2. **Certificate Course in Food Technology**
  3. **Diploma Course in Food Science and Quality Control**
  4. **Diploma in Food and Nutrition**
  5. **PG Diploma in Food Analysis and Quality Control**
  6. **Trade Diploma in Hotel Management (TDHM)**
  7. **Food Production**
  8. **Bachelor of Environmental Science (37)**
  9. **Bachelor of Hospital Management (93)**
  10. **Bachelor of Pharmacy (B. Pharma)**

**Introduction**

1. The program covers all the facets of healthcare including bio-chemical areas that concerns the preparation of medicine in implementing those for the right diagnosis.
2. Students will learn about the medicines and their effects on human body with details of chemical and organic properties of all the elements used.
3. There are different specialization like pharmaceutical chemistry, pharmaceutics, pharmacology and pharmaceutical analysis.

**Eligibility**

1. 10+2 with PCB

**Courses**

1. UG, PG & Research

**Institutions/colleges/universities**

1. Admission through JEE/NEET
   1. **B.Sc. (Hon) Agriculture**

**Introduction**

* The B.Sc. (Ag) degree differs from a B.Sc. degree
* Students use to study *Agricultural economics* rather than economics. Like engineering or forestry
* Agricultural science courses are infused with practicality
* It requires specialization for example, majoring in animal science, plant protection, soil science or agricultural engineering

**Eligibility**

* 10+2with science (PCB/PCM)

**Duration of the course:** 4-years

**Colleges**

* India has one of the largest agricultural education system with 42 states Agricultural Universities (SAUs)
* 3 Central universities (CAUs) viz. Imphal, Pusa and Jhansi

The curriculum is very broad and inter-disciplinary consisting of courses in

1. Agronomy,
2. Agricultural Micro-biology,
3. Horticulture,
4. Plant pathology,
5. Entomology
6. Agricultural Economics
7. Extension Education
8. Genetics and Plant Breeding
9. Soil Science
10. Soil Microbiology
11. Food Technology
12. Food Microbiology
13. Food Safety and Standards
14. Animal Husbandry

apart from supporting courses in Basic Science, Humanities and Agricultural Engineering.

* The program also includes a compulsory one semester internship (Rural Agricultural Work Experience,
* Most of the courses are infused with Practicality with emphasis on “hands on’ experience and ‘learning by doing’
* Prior to 1998, the B.Sc. (Ag) degree was known as B.Sc (Ag and AH) (AH= Animal Husbandry) and evaluation was on 5-point scale
* Since 1998, it has been designated as B.Sc. (Ag) and AH part has been transferred to BVSc (Bachelor of veterinary Science), which is now designated as BVSc & AH. However, B.Sc. (Ag) still retains courses in Animal Husbandry and nutrition.
* In 2006 ICAR has recommended to redesign B.Sc. (Ag) as B.Sc. Hon (Ag)
* Like BE/B.Tech, MBBS, or BVSc & AH. B.Sc. (Ag) is considered as a professional degree by Government of India.
* In recognition of its 4-year duration B.Sc. (Ag) holders are given some benefits
  1. **B.Sc. Anthropology**

**Introduction**

* Anthropology is the scientific study of humans, past and present in their cultural and biological conditions. This combination sets anthropology apart from other humanities and natural sciences. In simple terms, anthropology deals with determining what humans are, how they evolved, and how they differ from one another.
* Social Anthropology studies patterns of behavior,
* Cultural Anthropology studies the cultural meaning including norms and values.
* Linguistic Anthropology studies how language influences social life.
* *It ia the study of what makes us human,*
* It takes a broad approach to understanding so many different aspects of human experience , which we call holism.
* Anthropology consider the past through Archeology to see how human groups lived hundreds or thousands years ago and what was important to them.

**Eligibility**

* 10+2 in Science for B.Sc.

**Courses**

* B. A. / B. Sc.
* M. A. / M. Sc.
* M. Phil.
* Ph. D

**Institutions/colleges/universities**

* DU
* AMU
* Assam University
* Dibrugarh University
* Lucknow University
* Banaras Hindu University, Varanasi
* AU - Andhra University Visakhapatnam
* Panjab University, Chandigarh
* Dibrugarh University, Assam
* Guwahati University, Guwahati
* Karnataka University, Dharwad
* Sambalpur University, Orissa
* Institute of Archaeology, New Delhi,

**Employability**

* M.Sc. for getting a Job
* Ph.D. for work as an advisor for any International agency

**3.19A Archeology**

**Introduction**

The course is a subfield of anthropology. It exposes students to reconstruct extinct cultures from the artifacts as it studies the ancient and recent human past through material remains.

**Courses**

1. Bachelors of Arts in Ancient Indian Culture.
2. Bachelors of Arts in Ancient Indian History and Archaeology
3. Bachelors of Arts Archaeology and Museology
4. Master of Arts in Archaeology
5. Master of Arts in Museolog

**Eligibility**

10+2 with History

**Institutes/Universities**

1. Institute of Archaeology, New Delhi
2. National Museum Institute, New Delhi
3. Delhi Institute of Heritage Research and Management, New Delhi
4. MSG University, Baroda
5. University of Madras, Chennai
6. Tamil University, Thanjavur

* **Shri Braj Basi Lal is one of the well-known** [**Indian**](https://en.wikipedia.org/wiki/India) [**archaeologists,**](https://en.wikipedia.org/wiki/Archaeologist) **He was the Director General of the** [**Archaeological Survey of India**](https://en.wikipedia.org/wiki/Archaeological_Survey_of_India) **(ASI) and a recipient of the** [**Padma**](https://en.wikipedia.org/wiki/Padma_Bhushan)[**Bhushan**](https://en.wikipedia.org/wiki/Padma_Bhushan) **Award in 2000.**
* **He developed interest in archaeology and in 1943, became a trainee in excavation under a British archaeologist,** [**Mortimer Wheeler,**](https://en.wikipedia.org/wiki/Mortimer_Wheeler) **and worked at sites such as** [**Taxila,**](https://en.wikipedia.org/wiki/Taxila) [**Harappa**](https://en.wikipedia.org/wiki/Harappa) **and** [**Sisupalgarh**](https://en.wikipedia.org/wiki/Sisupalgarh) **in** [**Odisha.**](https://en.wikipedia.org/wiki/Odisha)
  1. **B.Sc. Bio-chemistry**
  2. **B.Sc. General**

**Introduction**

It is a graduate level course in science related subjects. Students can choose between B.Sc. general and B.Sc. (Hon). Those interested in the field of computers and information and technology can opt fof B.Sc. (computer science/IT). The traditional B.Sc. course includes subjects like PCM (Physics, Chemistry, and Mathematics) and PCB (Physics, Chemistry and Biology). It includes the study of Organic Chemistry, Bio-Physical chemistry, Human Physiology, Micro-biology, Basic Immunology, Enzymes, Virology etc.

**Eligibility**

10+2, admission in Du is exclusively on the basis of merit,

Other Universities do conduct entrance test

**Courses**

B.sc with PCM and PCB

* 1. **B.Sc. Computer Application (BCA)**

**Introduction**

* It is a technical degree that prepares thee students for a career in the field of Computer Application and Software Development.
* This being a professional course, even non- math students can also opt for this course.
* The course gives an insight into the world of Computers world and its application
* The Computer Applications course is designed to provide the student with the opportunity to expand and apply technological knowledge.

**Eligibility**

10+2 In any stream

**Duration:** 3-years

**Courses**

1. Diploma in Computer Application
2. Bachelor in Computer Application
3. Master in Computer Application
4. MBA in IT,
5. Research,

**Institutes/colleges/universities**

* DU Colleges
* IGNOU
* JMI
* AMU
* University of Madras, Chennai
* Chhatrapati Shahuji Maharaj University, Kanpur,
* University of Allahabad, Allahabad
* University of Mumbai, Mumbai
* National Institute of Electronics & Information Technology, New Delhi

**Note:** Computer Application Courses are also offered by various private institutions. Therefore, aspirants are advised to ensure the recognition and approved courses prior to admission.

* 1. **BVSc. Veterinary Science**
  2. **B.Sc. (Hon) Bio-informatics**

**Introduction**

* Bioinformatics is the application of statistics and computer science to the field of molecular Biology
* The primary goal of Bioinformatics is to increase the understanding of Biological processes, however its focus is on developing and applying computationally intensive techniques e.g. pattern recognition, data mining, machine learning, algorithms, and visualization to achieve this goal. Major research efforts in the field include sequence alignment, gene finding, genome assembly,, drug design, drug discovery, protein structure alignment, protein structure prediction, prediction of gene expression and protein-protein interactions, genome-wide association studies and the modeling of evolution.

**Eligibility**

* 10+2 with science stream.

**Courses**

* B.Sc. Bioinformatics
* BE Bioinformatics,
* B.Sc. + M.Sc. integrated Bioinformatics
* B.Tech Bioinformatics
* MBA Bioinformatics
* M.S. Bioinformatics
* M.Sc. Bioinformatics and Biotechnology
* M.Tech. Bioinformatics

**Institutions/colleges/universities**

* 1. **B.Sc. Hon Bio-chemistry**

**Introduction**

* Bio-chemistry is an under graduate 3-year degree course.
* It is the study of chemical process in living organisms.
* It includes the study of Bio-organic chemistry. Bio-physical chemistry, Human Physiology, Micro-biology and virology, Basic Immunology, Enzymes etc.
* It also includes the study of structure and functions of cellular components such as proteins, carbohydrates, lipids, nucleic acids and other bio-molecules involved in biological processes such as growth, metabolism, reproduction, heredity etc. as well as the effect of the environment on living organisms. In other words B.Sc. Bio-chemistry course covers study of the minutest characteristics of organisms and their biological processes.
* It is a career originating course that opens many bright job prospects.

**Eligibility**

10+2 with PCB

Some reputed colleges do conduct entrance examination to get to the course. Selection in these colleges is based on marks secured in the final merit i.e. total marks aggregated in the final exams of 10+2 and the entrance exam.

**Courses**

B.Sc. Hon, M.Sc.

**Institutions/colleges/universities**

* DU
* JMI
* AMU
* And other private colleges.
  1. **B.Sc. (Hon) Bio-technology**
  2. **B.Sc. (Hon) Botany**

**Introduction**

* it is a 3-year undergraduate course which can be pursued by aspirants who have completed their 12th class with good marks. This course deals with the study of general aspects concerning plant life. Aspirants who successfully complete this course will have a promising career ahead.
* B.Sc. Botany graduates have numerous higher study options available.
* These graduates can do numerous certifications as well.
* They can work in several job profiles

**Eligibility**

10+2 with PCB

**Jobs available**

After PG level there are plenty of jobs are in waiting.

* Teacher in schools and olleges
* Farming Consultant
* Environmental Consultancies
* Plant Pathologies
* Molecular Biologist
* Nursery Manager
* Ecologist
* Plant Explorer

**Institutions/colleges/universities**

* DU colleges, admission strictly on merit
* JMI
  1. **B.Sc. (Hon) Chemistry**

**Introduction**

It is an undergraduate course which deals with the science of matter and the changes it undergoes. The science of matter is also addressed by Physics, but while Physics takes a more general and fundamental approach, Chemistry is more specialized, being concerned with the composition, behavior, structure and properties of matter as well as the changes of it under-goes during the chemical reactions. B.Sc. Chemistry is physical science course which studies various substances, atoms, molecules, crystals, and other aggregates of matter whether in solution or combination, and which incorporates the concepts of energy and entropy in relation to the spontaneity of chemical processes. B.Sc. in Chemistry is of 3-years duration course six semesters.

**Eligibility**

10+2 with PCM or PCB

**Courses**

B.Sc. Hon, M.Sc.

**Institutions/colleges/universities**

* DU
* JMI
* AMU
* And other private colleges.
  1. **B.Sc. Fisheries Science (B.F.Sc)**

**Introduction**

* Fisheries Science is the academic Discipline of Managing and understanding Fisheries
* It is multidisciplinary science, which draws on the disciplines of aquaculture including breeding, genetics, biotechnology, nutrition, farming, diagnoses of diseases in fishes, other aquatic resources, medical treatment of aquatic animals, fish processing including curing, canning, freezing, value addition, byproducts and waste utilization, quality assurance and certification, fisheries microbiology, fisheries biochemistry,
* Fisheries resource management including biology, anatomy, taxonomy, physiology, population dynamics, fisheries environment including oceanography, limnology, ecology, biodiversity, aquatic pollution.
* Fishing technology including gear and craft engineering, navigation and seamanship, marine engines, fisheries economics and management and fisheries extension.

**Duration**

* Fisheries science is generally **4-year** course typically taught in a university setting, and can be the focus of an undergraduate, postgraduate or Ph.D program

**Eligibility**

* 10+2 in science stream (PCB)

**Institutes**

* Central Institute of Fisheries Education
* CIFE
* CENTRAL Institute of Fisheries Education, Versova, Mumbai.
* Central Institute of Fresh water Aquaculture, Orissa
* Central marine Fisheries Research Institute, Kerala
* National Institute of Oceanography, Dona Paula, Goa.
* IIT, West Bengal
* Central Institute of Food technology, Kerala
* National Bureau of Fish Genetic Resources, Lucknow

**Career growth in Fisheries**

* Own business
* Assistant Fisheries Development Officer.
* Fisheries Extension Officer
* District Fisheries Development Officer

**Central government**

* Marine Product Export Development Authority
* FAO
* NACA
* Fisheries Survey of India
* NIO
* NABARD
* WHO
* EIA
* Academic Institutes (can apply as a research Assistant)
* Bio-chemist
* Asst. Professor (with M.F.Sc.degree) in faculty of Fisheries.

**National Banks**

* Field Officer or even Manager in Agriculture Loan Section

**Private Sector**

* Sea food Processing and Export Industry
* Fishing Gear Industry
* Aqua Feed Plant
* Pharmaceutical Companies
* In the area of Designing, Construction, management of fish-farm and hatcheries

**Foreign Jobs**

* Job opportunities in Australia, Japan, USA, Canada, china and European Countries. Gulf and many African Countries

***Deep sea Exploration for those who are interested in it***

* 1. **B.Sc. Food Quality Assurance**
  2. **B.Sc. Forestry**
* It provides the students with the knowledge and training about forestry
* It trains the students about the knowledge and training about Forestry.
* Forestry program trains students in managing of forests, new plantation, maintaining old plantations and other natural resources.
* The main aim of forestry studies is the creation and implementation of systems and framework for sustainable continuation of forest resources and supplies and to make sure that non-renewable resources do not get extinct.
* During the program, students are offered theoretical and practical knowledge regarding forestry and other related fields.
* Forestry professionals have various duties to perform such as managing forests and forest supplies, generating awareness and implementing new technologies in the forestry department.
* Candidates who are keen to take up a career in forestry must have a spirit of adventure, enthusiasm for outdoor activities, physical fitness and should be adaptable to the new surroundings.
* They also should have a keen interest in global concerns and how to preserve the environment.

**Duration of the course**

* 4 yers.

**Fee**

* 30,000/year

**Eligibility**

* 10+2 in any stream with minimum 50% marks.

**Courses**

* UG, PG and Ph.D.

**Career options nd Job Prospects**

* Students, after pursuing B.Sc. in Forestry can find work, both in public and private sectors.
* They can work with Indian Council of Forestry Research and Education and various affiliated Forestry Research Institutes such as Institute of Social Forestry, Eco-rehabilitation, Forest Research Institute etc.

**Popular Forestry Employment Areas**

* Indian Council of Forestry Research and Education
* Forest Departments
* Zoological Parks
* Horticulture Departments
* Wildlife Research Institute
* Wildlife Department
* National Parks and Sanctuaries
* Wildlife Ranges
* Forest Nurseries
* Colleges and universities

**Listed below are suitable jobs**

* Assistant Manager
* Farming Manager
* School teacher
* Agri-Credit Manager
* Nursing Manager

**Institutes/colleges/universities**.

* Doon School Group.
* Vishwakarma University, pune.
  1. **B.Sc. (Hon) Geology**

**Introduction**

* Geology is the science that comprises the study of the solid earth and the process by which it is shaped and changed.
* Geology provides primary evidence primary evidence for plate tectonics, the history of life and evolution and paste climates.
* In modern times geology is commercially important for mineral and hydrocarbon exploration and for evaluating water resources
* Important for the prediction and understanding of natural hazards. The remedial of environmental problems and providing insight into paste climate changes
* It plays an important role in geotechnical engineering
* It is a major academic discipline.

**Eligibility**

* 10+2 with science

**Courses**

* B. Sc
* M. Sc
* M. Phil
* BA with Geography as a subject
* BA Honors (Geography)
* [Integrated M. Tech. (Geophysical](https://www.iitr.ac.in/departments/ES/pages/New_Curriculum_Integrated_M_Tech___Geophysical_Technology__.html) [Technology)](https://www.iitr.ac.in/departments/ES/pages/New_Curriculum_Integrated_M_Tech___Geophysical_Technology__.html)
* [Integrated M. Tech. (Geological Technology)](https://www.iitr.ac.in/departments/ES/pages/New_Curriculum_Integrated_M_Tech___Geological_Technology__.html)
* M. Tech. Earth Sciences
* M. Sc. (Applied Geology)
* M. Phil. Geology
* M. Phil. Geo-informatics
* Ph.D. Geology
* MA Geography
* M. Sc Geography
* M. Sc., M.Phil. & Ph. D
* M. Sc. Geology (Five Year Integrated)
* M. Sc. Geology (Two Year CBCS)
* PG Diploma in Petroleum Geoscience
* PG Diploma in Remote Sensing and GIS.

**Employment areas**

* Teacher in school, college and university
* Oil companies
* Research labs.
* Content writing (geology)

**Institutes/Colleges/universities**

* Indian Institute of Technology, Roorkee, Uttarakhand
* [Indian Institute of Science,](http://www.ceas.iisc.ernet.in/iisc.ernet.in) Bangaluru
* Bangalore University, Bengaluru
* Kurukshetra University, Kurukshetra, Haryana,
* University of Delhi
* MD University, Rohtak, Haryana
* Annamalai University, Annamalainagar, Tamil Nadu
* Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)
* AMU
* Maharishi Dayanand University, Delhi Road, Rohtak
  1. **B Sc. Genetics.**

**Introduction**

* Genetics is a branch of biology that covers all the branches under **genes,** variations and heredity and evolution in all the living organisms.
* Students are offered in-depth knowledge about how genetic traits are passed down from one generation to another
* The course includes topics from the subjects like Bio-chemistry, Genetic Engineering, Model Organisms, Microbiology, Cloning etc.
* Students who want to pursue Genetics must have a keen interest and an in-depth knowledge of medical genetics and cloning.
* They are also required to have an understanding of both old and new genetic theories.
* It is becoming a widely popular course among students these days, because of the new techniques and technological advancement in the field of genetics and life sciences have led to various new discoveries in the respective fields.

**Eligibility**

10+2 in Science

**Duration of Course:** 3 years

**Courses**

UG, PG and Research

**Job prospects**

* It opens career opportunities in various fields such as genetics, Material science, life sciences, bio-technology, Bio-medical sciences, Physical Sciences, Chemical Sciences etc.
* Can go to higher studies like M.Sc, M.Phil. after post graduation they are eligible for lectureship.
* Some other employment areas;

1. Hospitals
2. Research Centres
3. DNA Forensic Departments
4. Animal Breeding Industry
5. Consultancies
6. Biotechnology Industries
7. Food Processing Industries
8. Healthcare centres
9. Agricultural Firms
10. Pharmaceutical Firms/industries
11. Genetic Testing labs
12. Diagnostic Centres
13. Colleges/Universities

**Jobs Available**

* Consultant
* Genetic Lab Technician
* Regulatory Process manager
* Data Specialist
* Animal Breeder
* Forensic Scientist
* Bio-technician
* Clinical Researcher
* Genetic Laboratory Research Technician
* Genetic clinical Scientist
  1. **B.Sc. Home Science**

**Introduction**

Home science is not only a science, it is also an atr form which draws and synthesizes the knowledge, concepts, and theories from arts, science and humanities. It is th art of managing resources efficiently and the science of improving home life, family life and intellectual thinking.

There is only a marginal difference between BA Home Science and B.Sc. Home Science. The difference lies in matter of certain topics being covered and the fact that the B.Sc. Home Science requires the study of physics, Chemistry, Biology and Mathematics in 10+2

**Eligibility**

10+2 in any stream for BA Home Science

10+2 with science subjects for B.Sc. Home Science

**Courses**

BA and B.Sc.

**Institutions/colleges/universities**

Different Colleges of DU

JMI

AMU, Aligarh

* Generally the course is undertaken by girl students, but there is no restriction for boys as such.
* After completing the BA or B.Sc. in Home Science, one can pursue the masters in the subject.

**Specialization**

There are five major components or areas of specialization in Home Science

* Food and Resource
* Fabric and Human Communication
* Nutrition Management
* Apparel Science Development, and
* Extension Today

Home Science is so advanced that each specialization is a domain in its own with its areas of specialization and Vocational/professional opportunities. Some of the areas of further specialization are as follows.

**Main Branch**

**Food and nutrition**

* Food science
* Clinical and community nutrition
* Institutional food service

**Home Science in daily life**

* Fabric and Apparel
* Clothing construction science
* Textile Science
* Textile designing
* Garment designing
* Care and maintenance of clothes
* resource management
* interior decoration
* consumer Education
* child welfare
* Adolescent marriage and family guidance
* Care of the elderly
* Care of special children
* Program planning and evaluation
* Training and capacity building
* Management of community service organization

A number of opportunities are available in private industry and Government and social sector, personal requirement of special children and elderly where one can find jobs and satisfaction.

* 1. **B.Sc. Horticulture.**

**Introduction**

* It is a UG Program that will help one build a career in Agriculture/Plantation/Management/research and Development sector
* Students who have an interest in plant cultivation, research in the field of plant genetics and outdoor work may pursue this course.
* Job opportunities available in Govt. and Private sectors especially after PG.
* One has a good chance to build a rewarding career in the R & D sector.
* It is all about cultivation of plants, starting from seed related study to scientific study of cultivation, genetics of plants, plant diseases etc.
* In short it is all about the application of scientific knowledge in plant cultivation and thus increase productivity and yield.
* For achieving the said goal of improved productivity, this branch makes use of concepts of Biology, Bio-chemistry, Genetic Engineering etc.
* Apart from the theoretical subjects and practical sessions, hands on industrial and field training programs also form an integral part of B.Sc. Horticulture program.

**Eligibility**

10+2 in science stream (PCB)

Register for state level entrance test

**Courses**

UG & PG course and Advanced Ph.D. in the subject

**Job opportunities in Govt. Sector**

* Office level posts
* State wise Agriculture Department
* State wise forestry Departments
* Spice/coir/rubber Boards etc

**Job opportunities in private Sector**

* Private Plantation
* Agricultural Machinery and equipment manufacturing firms
* Ornamental Plants and flowers business
* Food production and technology Industry

**B.Sc. Agriculture or B.Sc. Horticulture, Which is better?**

* B.Sc. Agriculture is more demanding than B.Sc. Horticulture
* Horticulture is a part of Agriculture

**3.36 B.Sc. Industrial Chemistry.**

**Introduction**

* It is the branch of chemistry which applies physical physical and chemical processes towards the transformation of raw materials into products that are of benefit to humanity.
* It provides a broad education within chemistry with application of mathematical, engineering and management principles.

**Eligibility**

* 10+2 science

**Scope of the subject**

* If the course is studied with a reconised university, the chances of getting good position are very high.
* Options are available for an Industrial job or research field.
* In Industrial side you can select the manufacturing, production or development units.
* If you opt for higher education option for research is available.
* After research, you can join a laboratory or a research unit.
* MBA is another option to choose.
* It has huge application in various fields like pharmaceutical companies, polymer processes, petro-chemical industries and now a days it is very much useful in food and beverage industry.

**Courses**

* UG, PG and Ph.D.

**Colleges**

* DU Colleges
* AMU
* University of Kalicut
  1. **B. Sc. (Hon) Mathematics**

**Introduction**

Mathematics is the science that deals with the logic of shape, quantity and arrangement. Math is all around us, in everything we do. It is the building block for everything in our daily lives, including mobile devices, architecture (ancient and modern), art, money, engineering and even sports. The word comes from the Greek word ‘mathema’ meaning science, knowledge or learning and is sometimes abbreviated to **maths** in England, Australia, New Zealand or **math** in USA and Canada.

* Mathematics is useful for solving problems that occur in the real world, so many people beside mathematicians study and use mathematics.
* Some knowledge of math is required in almost all the jobs.
* People working in business, science, engineering and construction need some knowledge of mathematics.

**Areas of study in mathematics**

* **Number:** it includes the study of numbers and quantities
* **Structure:** many areas of mathematics study the structure that an object has.
* **Change:** some areas of mathematics study the way things change. Most of these areas are part of the study of analysis.

**Applied mathematics**

1. Mathematical finance
2. Banking
3. Insurance companies
4. Software companies
5. Game applications
6. Management firms.

**Eligibility**

* 10+2 with Mathematics as one of the subjects.
* Admission in DU Colleges strictly on merit
* Cut off percentage remains about 98.

**Courses**

* B.Sc. Hon, M.Sc., M.Phil., Ph.D

**Institutes/colleges/universities**

* Christ University, Bangalore
* Fergusson College, Pune
* Oxford College of Science
* Mount Carmel College, Bangalore
* St. Joseph College, Kalicut
* University of Lucknow
* Ranchi University
* Jamia Hamdard, Delhi
* University of Delhi
* JMI
* AMU
* And many other colleges.

**7 countries that have smart mathematics students**

1. Singapore
2. Australia
3. Russia
4. Iran
5. Japan
6. China
7. India.
   1. **B.Sc. Microbiology**

**Introduction**

* Microbiology is the study of microorganisms, which are microscopic, unicellular, and cell-cluster.
* This includes eukaryotes such as fungi and protists and prokaryotes
* Viruses and prions though not classified as living organisms are also studied in Microbiology.
* It typically includes the study of the immune system or immunology

**Eligibility**

* 10+2 science (PCB)

**Duration**

* 3 years

**Courses**

* UG and PG (M.Sc.), M.Phil., Ph.D.

**Employment Areas**

* Colleges, Universities
* Development laboratories
* Hospital pharmaceutical Sector
* Food Industry
* Beverage units
* Chemical industries

**Job Types**

* Bacteriologist, Industrial Microbiologist, Virologist , Mycologist , Biochemist, Proto Zoologist, Geneticist

**Colleges**

* Institute of genetic Engineering, Kolkata
* DU colleges
* St. Xavier’s college, Kolkata

* 1. **B.Sc. (Hon.) Molecular Biology**

**Introduction**

* It is the branch of Biology that deals with the molecular basis of biological activity.
* This field overlaps with other areas of Biology and Chemistry, particularly with Genetics and Biochemistry.
* Molecular-biology chiefly concerns itself with understanding and the interactions between the various systems of a cell, including interactions between different types of DNA, RNA and protein biosynthesis as well as learning how these interactions are regulated.

**Eligibility**

* 12+2 Science (PCB)

**Duration**

* 3 years

**Courses**

* Molecular Biology B.Sc. Hon.
* M.Sc. Hon Molecular biology and Biochemistry.
* M.Sc. Molecular Biology and genetic Engineering.
* M.Sc. Molecular Biology.
* M.Tech. Molecular Biology and human Genetics.
* M.Tech. molecular Medicines.
* Certificate course in Molecular and human Genetics

**Institutions/colleges/universities**

* DU
* JNU
* Indian Agriculture Research Institute, PUSA. (for M.Sc.)
* And many Institutes in other states.
  1. **B.Sc. (Hon) Nanotechnology**

**Introduction**

* It is the study of manipulating matter on an atomic and molecular scale
* Generally nanotechnology deals with structures sized between one to hundred nanometers in at least one dimension within that size.
* Quantum mechanical effects are very important at this scale, which is in the quantum realm.
* Nanotechnology is very diverse, ranging from extensions of conventional device physics to completely new approaches based upon molecular self-assembly, from developing new materials with dimensions on the nano-scale to investigating whether we can directly control matter on the atomic scale.

**Eligibility**

* 10+2 science

**Courses**

* 1. B.Tech.—Electronics and Nanotechnology 2. B.Tech 3. MBA Nanotechnology 4. M.E.

5. M.Sc.—Nano Science & Technology 6. M.Sc Nanotechnology 7. M.Tech. Nano Science & Technology and many more.

**Employment Areas**

* Product Development
* Forensic Science
* Biotechnology
* Genetics
* Health industry
* Environmental Industry
* Space Research
* Agriculture
* Private Research Institutes

**Colleges/institutions/universities**

* S.N.R. Sons College, Coimbatore.
* Lovely professional University, Jalandhar.
* Institute of Management and Technical Studies, IMTS, Noida
  1. **B.Sc. Nursing**

**Introduction**

* Bachelor of Science (Nursing) prepares nurses for a wide variety of professional roles and graduate study.
* Course work includes nursing science, research, leadership, and related sciences that inform the practice of nursing.
* It also provides the students with general education in math, humanities and social sciences.
* An undergraduate degree affords opportunities for greater career advancement and higher salary options.
* It is often a prerequisite for teaching, administrative, consulting and research role.

**Eligibility:** 10+2 Science

**Duration**: 3-year degree course

* 1. **B. Sc. (Hon) Physics**

**Introduction**

it is an undergraduate degree. The time period is 3 years, same as in B.Sc. general. B.Sc. Hons is considered to be superior as compared to the B.Sc. general course. It is also considered that getting a job with B.Sc. Hon is easier than getting a placement with B.Sc. general.

**Eligibility**

12+2

**Institutions/colleges/universities**

* Colleges of DU
* JMI
* AMU
* Certain other private colleges.
  1. **B.Sc. (Hon) Statistics**

**Introduction**

It focuses on the collection, meaningful segregation and interpretation of collected data. The curriculum is designed to teach students subjects like probability and permutation. After graduation one can pursue courses like actuarial science. It is a 3-year degree course. Graduating in Statistics opens up a variety of career opportunities for students

**Eligibility**

10+2 with Math as one of the subjects

**Job opportunities**

* One can become a business analyst
* Statistician are also required in government sector to work on studies and research on consumer prices, fluctuations in the economy, employment patterns, population trends etc.
* Opportunities are also available in private sector in marketing insurance and Information and Technology.

**Courses**

B.Sc. M.Sc.

**Colleges/universities**

* IIT Delhi.
* International management Institute, Delhi,
* Entrepreneurship Education, Mumbai.
* Narsee Monjee Institute of Management Studies, Mumbai.
* Vishwakarma University, Pune.

**Average fee**

* Rs. 50,000 per year.

**After UG**

* M.Sc. Actuarial science
* M.Sc. in Library and information science.
* M.Sc.in Quantitative Economics.
* MCA.
* MBA.
* P.G. Diploma in statistics.
  1. **B.Sc. (Hon) Zoology**

**Introduction**

it is an undergraduate degree course. The branch of Biology relates to the animal kingdom, including the structure, embryology, evolution, classification, habits, and distribution of all animals, both living and extinct.

Zoology graduates can expect a bright future ahead. The course is career oriented in nature that opens many job opportunities for the graduates.

**Eligibility**

10+2 in PCB

**Courses**

B.Sc. Hon. , M.Sc. , Ph.D.

**Institutions/colleges/universities**

* DU colleges, admission strictly on merit
* JMI
* AMU
* CCSU
* Many other private colleges
  1. **BVSc. Veterinary Science**
  2. **B.Sc. Anesthesia Technology.**

**Introduction**

Anesthesia or Anaesthesia is a state of controlled, temporary loss of sensation or awareness that is inducted for medical purposes. It may include some or all analgesia, paralysis, amnesia and unconsciousness. A patient under the effects of anesthesia drugs is referred to as being anesthetized

Anesthetists are specialist doctors who are responsible for providing anesthesia to patients for **operations** and procedures. In addition Anesthetists have range of practice which extends beyond anesthesia for surgery to include pain management and intensive care.

The role of the **Anesthesia Technologist** is to support the work done by the professional **Anesthesia** personnel. **Anesthesia Technologists** are responsible for managing the **anesthesia** equipment and for its proper maintenance.

**Eligibility**

10+2 with PCB WITH AT LEAST 50% MARKS

**Career in Anesthesia**

It is one of the most useful areas in the field of healthcare. Anesthetists may find many job opportunities. Employable they are in medical universities and schools, public sector, out-patient care center, specialty hospitals, office of physicians etc.

**Courses**

B.Sc. M.Sc

**Institutions/Universities**

Some of the top institutes

* All India Institute of Medical Sciences (AIIMS)
* Aligarh Muslim University, Aligarh
* Mahatma Gandhi Mission Institute of Health Science, Mumbai
* Indira Gandhi Medical College. Shimla
* Armed Force Medical College, Pune.
  1. **B.Sc. Audiology & Language Pathology (BASLP)**

**Introduction**

The bachelor of Audio and Speech Language Pathology is a course to generate skilled and efficient man power to work effectively with persons having communication disorders. The course is advisable to those who have a passion to work with differently able people in the society and to make a change in their lives.

Speech therapy is an allied branch of health sciences related to the disorder of speech, voice and language of a person. Speech therapy and audiology have become promising career options in recent times. A person who has a degree or diploma in speech therapy is called a speech therapist. The growing awareness among people to treat speech and auditory disorders has increased the demand for these experts. As a result a career as a **speech therapist** is proving to have great potential for aspiring students.

**Eligibility**

10+2 (PCB & PCM)

**Courses**

B.Sc. BASLP

**Course duration**

3+1 divided into 6 semesters and a final year of internship

**Institutions/Universities**

There are 32 Audiology & Speech Therapy in Paramedical colleges in India.

1. Guru Gobind Singh Medical college and Hospital, Faridkot
2. SGT University, Gurgaon
3. Faculty of Allied Health, Chennai
4. Trishna College of Paramedical and Polytechnic, Dilshad Garden, Delhi.
5. GGSIPU, Dwarka, Delhi and others
6. AIIMS, Delhi
7. University college of Medical Science, Delhi
8. Pt. Bhagwat Dayal Sharma Medical College, Rohtak
9. Hamdard Institute of Medical Science and Research, Delhi
10. Jamia Hamdard University, Delhi
11. Amity University, NOIDA
    1. **Bachelor of Dental mechanics (BDM)**
    2. **Bachelor of Pharmacy**
    3. **Bachelor of Physiotherapy**

**Introduction**

* It is an Undergraduate course in the field of Medical Science’
* Physical therapy (or physiotherapy), is an allied health care profession used to prevent and treat many disabilities and diseases. Physiotherapists deal with the remediation of impairments and disabilities to restore physical mobility and help in maintaining quality of life. The therapists use the techniques of examination, evaluation, diagnosis and physical intervention.
* Physical Therapy Programs provide core skills like manual therapy, therapeutic exercise and the application of electro physical modalities, to the prospective students. The course focuses on the use of physical therapy, massages, physical movements and the exercise to improve and cure injuries, deformities and diseases.
* Physiotherapy doesn’t rely extensively on the use drugs and medicines. Instead, it relys on the physical treatment to improve the situation.

**Eligibility**

* 10+2 PCB
* Selection: The admission to institutes is through entrance examination. There is a Common Entrance Test (CET) for Bachelor of Physiotherapy (BPT). Admission is based mainly on CET scores.

**Courses**

* Bachelor of Physiotherapy. (BPT) UG and PG (in, Cardiopulmonary, Neurology, Orthopedics, Sports, community Rehabilitation, Obstetrics & Gynecology, Neurology, Cardiology).
* Master of Physiotherapy (MPT)
* Post Graduate Certificate Course in Sports Physiotherapy (PGCSP)

**Duration**

4 years plus 6 months internship, i.e. 4 and a half year in total

**Employment Areas**

1. Educational Institutions. 2. Hospitals. 3. Health Institutions 4. Schools for the mentally retarded children. 5. Sports training facilities. 6. Orthopedic departments. 7. Fitness centres

**Job Profiles**

1. Lecturer. 2) Osteopath. 3) Physiotherapist. 4) Sports Physio Rehabilitator. 5) Therapy Manager

**Institutions/Colleges/Universities**

* Sri Guru Gobind Singh University
* Pt. Deendayal Upadhyaya Institute For The Physically Handicapped, New Delhi,
* School of Physiotherapy, SSG Hospital, Baroda, Gujarat
* Nizam's Institute of Medical Sciences, Hyderabad, Telangana.
* Indian Institute of Health Education & Research, Patna, Bihar
  1. **B.Sc. Bio-informatics**
  2. **B.Sc. Bio-medical Science.**
  3. **B.Sc. Bio-technology (32)**

**Introduction**

Biotechnology is utilizing the sciences of biology, chemistry, physics, engineering and information technology to develop tools and products to apply to living cells/organisms.

**Genetic Engineering**

Genetic engineering is the study of knowledge obtained from genetics to alter the reproduction and hereditary processes of organisms. It deals in cloning, in-vitro fertilization, species hybridization or direct manipulation of the genetic material itself by the recombinant DNA technique.

**Plant Tissue Culture**

Functions in the field of in-vitro regeneration and propagation of plantlets, a Tissue Culture specialist may also be involved in plant germ plasma conservation.

**Plant Genetics**

Activities to improve plants by evolving new horticultural varieties through hybridization, this work is generally carried out in the laboratories

**Eligibility & Courses**

1. For B. Sc. Courses: Pass in 10+2 with PCM. (Biology)
2. For M. Sc. Courses: Bachelor’s degree under 10+2+3 in Physical,Biological, Agricultural, Veterinary, Fishery Sciences, Pharmacy, Engineering, Technology or Medicine (MBBS)
3. For M. Sc. (Agriculture) Biotechnology/M.Sc. Animal Biotechnology: Bachelor's degree in agriculture, horticulture, forestry, fishery, Veterinary Sciences or Agricultural Engineering.
4. For M Tech Biotechnology : B. Tech degree - in chemical Engineering, Biochemical Engineering, Industrial Biotech (BE), Leather technology, Pharmaceutical Technology, Food Technology, B. Pharma, and Dairy Technology or Master's Botany, Zoology Bio-chemistry, Microbiology, Genetics, Physiology, Pharmacology and Biophysics.

**All India Biotechnology Entrance Examination**

Jawaharlal Nehru University, New Delhi conducts the Combined Entrance examination for admission to M.Sc./M.Sc. (Agri.)/M.V.Sc.(Animal) Biotech/M. Tech Biotechnology in association with other universities in India. Candidates who have done their B. Sc. in physical, biological, agricultural, veterinary and fishery sciences, pharmacy, engineering, technology or medicine can take up this examination.

**Education Abroad**

The Ministry of Science and Technology awards the Biotechnology Overseas Associate ship for advanced research in molecular biology, microbial genetics, gene therapy, virology, tissue culture and so on.

* 1. **B.Sc. Cardiac Care Technology**

**Introduction**

It is a 3-year full-time under graduate course divided into 6 semesters. It is an allied course in medicine. Cardiac technologists assist physicians during invasive cardio-vascular testing. A tube is inserted into one of the blood-vessels that carry blood into the heart.

The job of a technician is to perform tasks that require less medical training before and during the procedure, so doctors can focus on the results of the test.

A patient’s life may depend on the efficiency Cardiac care technologists.

**Eligibility**

10+2 in science (PCB) from any recognized educational board. Minimum aggregate 50% marks.

**Course**

B.Sc. cardiac care technology

**Admission process**

Entrance test. Counseling after qualifying the entrance examination.

**Recruiting areas:** Private clinics, hospital administration, research and medical colleges etc.

**Job avenues**

* Cardiovascular technologist Rs. 6,68,000/per year.
* Medical sonographer, Rs. 7,00,000/year.
* Cardiologist, Rs. 16,00,000/year.

**Institutions/Colleges/university**

* Rajiv Gandhi Para medical Institute, Delhi, 10,000.
* Christian medical college, Vellore, (Fee- I,13,000 per year).
* Geetanjali University, Udaipur, (70,000 per year).
  1. **B.Sc. Cardio Vascular Technology**
  2. **B.Sc. Diabetes Sciences**
  3. **B.Sc. Dialysis Therapy**
  4. **B.Sc. Echocardiography**
  5. **B.Sc. Emergency Medical Technology**
  6. **B.Sc. Environmental Science (37)**

**Introduction**

The course offers extensive knowledge regarding environment and impact on human activities on wild life and study of ecological balance. It evokes awareness and makes the students capable of solving various problems that threaten the eco-system. The program also prepares the students for advanced research in the field of eco-system and wildlife conservation.

Graduate in this field have bright career opportunities and a chance to improve the living conditions of various living beings.

**Eligibility**

10+2 science with 50% marks minimum aggregate. (PCM)

Lateral entry option: it is open for candidates who have pursued 3-year polytechnic diploma after 12th class.

**Admission Process**

Merit-based: directly on the bases of score obtained in 10+2

Entrance-based: on the basis of score obtained in national level, state level or college level entrance exam.

**Courses**

B.Sc. M.Sc.

**Course fee**

Rs.20,000-Rs 50,000.

**Career options and job prospects**

There is a lot of scope for graduates and post graduates as awareness regarding the environment is increasing amongst the young individuals. There are a lot of jobs to be pursued after graduation as;

* Catastrophe Modeler
* Conservation Hydrologist
* Director of waste management
* Environmental Researcher
* Environmental journalist
* Environment Photographer
* Forest Carbon Specialist
* Wild-life Film-maker

**Salary: Rs 1.2---Rs.2.5 LPA**

**Colleges/Institutions**

There are 50 environmental colleges in India.

* Vidya jyoti Eduversity, Chandigarh
* Fergusson College, Pune
* Patna Science College, Patna
* Amravati University,
* Indian Institute of Science
* IIS University, Jaipur.
* Mbitious Institute of Professional Studies, Delhi
* Netaji Nagar for women, Kolkata
* Other colleges at Ambala, Gondia, Aurangabad, Bareilly, Murshidabad, Solapur etc.

* 1. **B.Sc. Forensic counseling.**
  2. **B.Sc. Forensic-science,**

**Introduction**

* It is a 3-year graduation course which involves the application of scientific knowledge to the investigation of crimes. Professionals in this discipline apply their knowledge of science to analyze the evidence found at a crime scene.
* An analysis could involve anything from an object at the crime scene, to soil, blood stains, saliva, body fluids, bones, finger prints, DNA profiling, recovering data from computers, researching new technologies etc.
* Its syllabus includes essential components such as Forensic Pathology, Psychiatry, Psychology, Forensic medicine and Odontology (Dentistry)

**Eligibility**

10+2 with science stream

**Courses**

Diploma in Forensic science and criminology,

Diploma in Forensic science and law

Graduation and PG

**Institutions/colleges/universities**

* Sharda University, Greater Noida
* Lovely Professional University, Jalandhar
* University of Mumbai
  1. **B.Sc. Genetics**
  2. **B.Sc. Green Technology**
  3. **B.Sc. Health management.**
  4. **B.Sc. Histopathology.**
  5. **B.Sc. Lab technology,**
  6. **B.Sc. Lab-technician (Pathology)**
  7. **B.Sc. Intensive Care Technology**
  8. **B.Sc. Medical Imaging technology**

**Introduction**

* It is a 3-year degree course.
* The discipline involves the techniques and processes employed in creating images of human body parts for clinical purposes or in medical science.

**Eligibility**

* 10+2 science (PCB)

**Fees for the Course**

* Rs. 2 to 5 lacs

**Salary**

* Rs. 3 to 10 lacs

**Colleges**

* Institute of Public Health & hygiene, 011-26782850-54
* Jamia Hamdard
* Government Medical College, Amritsar
* Ansal university, Gurgaon
* Amity Institute, Noisa
* Sharda University, Greater Noida.
* Pandit Bhagwat Dayal Sharma University of Health Sciences
  1. **B.Sc. Medical Lab Technology**

**Introduction**

* It is allied health specialty program concerned with the diagnosis, treatment and prevention of diseases through the use of clinical laboratory tests.
* Professionals play a critical role in collecting the information needed to give the best care to an ill or injured patient.
* Medical practice is literally not possible without the test performed in the laboratory.

**Eligibility**

* 10+2 (Science- PCB)

**Courses**

* UG and PG courses’

**Employment opportunities**

* Medical lab professional have a no. of choices of practice settings, such as hospitals, clinics, nursing homes, public health facilities, commercial laboratories etc.
* In these settings, communication and research skills are highly valued.

**Average course fee**

* Rs. 10,000 to 4 lacs

**Colleges/institutes/universities**

* 1. **B.Sc. Medical Radiologic Technology**
  2. **B.Sc. Medical Record Technologies**

**Introduction**

* This course plays a key role in maintain the patients records and to promote research of quality in the financial interests of the patient of the hospital with an excellent statistical reporting system.
* Students learn about billing and how to use medical office software.
* Aspiring medical record technicians enroll in this program learn to operate and manage the newest electronic record system being used by healthcare facilities.
* In addition to this they learn old fashion filing, record retrieval etc.

**Eligibility**

* 10+2 in PCM, percentage of marks required—45 or 50

**Duration**

* 3-year degree course

**Who is suitable for the course**

* Students who want to go for further gigher degree courses such as Masters, M.Phil. and Ph.D. are suitable for this course.
* Candidate should be a hard worker, can work hours in the lab, and should have a team spirit.

**Skills Required**

* Attentive towards the people.
* Can understand the written sentences.
* Should manage his own time and others time as well.
* They should convey information effectively.
* Computer skills.

**Job Prospects**, Excellent, there is a great demand for experienced MRT.

**Institutions/colleges/universities**

* Chennai Medical College Hospital & Research Institute, SRM University
* Hamdard Institute of Medical Science.
* All India Institute of Medical sciences (AIIMS), New Delhi.
  1. **B.Sc. Medical lab technology**

**Repeat-------3.71 and 34**

* 1. **B.Sc. Neurophysio-Technology**

**Introduction**

* Neurophysio Technology is a discipline within Healthcare Science where healthcare Practitioners and Healthcare Scientists measure the functions of nervous system to ensure normalcy and help in the diagnosis and monitoring of the progress of Neurological disorders.
* Healthcare Practitioners and Healthcare Scientists perform a range of different tests in patients of all ages, all of which require a considerable amount of patient contact and also good communication skills, as each involves attaching electrodes to the patient and encouraging co-operation before the recordings can be made.
* Clinical Neurophysiology departments are usually based in hospitals and linked to neurological centres.
* Most investigations in Neurophysiology are recorded in dedicated environments, however they are also performed at the patient’s bed site, in intensive care units, and also in operation theatres.
* These studies measure the function of the peripheral nerves responsible for movement and sensation.
* The nerves are tested by applying a small electrical current to them and recording the response.
* These tests are performed by healthcare practitioner, healthcare scientists and also clinical Neurophysiologists.

**Eligibility**

* 10+2 science

**Admission:** through entrance exam.

**Institutions/colleges/universities.**

* AIIMS
* Sharda University, Greater NOIDA
* LLRM Medical College, Meerut
* Ansal University, Gurgaon.
* Pt. Bhagwat Dayal Sharma, PG Institute of Medical Sciences, Rohtak
  1. **B.Sc. Nutrition and Dietetics.**
  2. **B.Sc. Operation Theatre Technology**
  3. **B.Sc. Operation Theatre Technology**

**Introduction**

* B.Sc in **Operation Theatre Technology** is related to all the work and management of the **Operation Theatre** .
* The course prepares students for managing the patients as well as for monitoring ins and outs of an **operation Theatre.**
* During the study, students are responsible for looking after all the surgical instruments as well as their sterilization.
* Student assist the surgeon during operations and closely look after the drugs , anesthesia gases, drapes, and sterilization requirements during surgery.
* In addition minor tasks of arranging operation theatre table, anesthesia table and managing the staff prepare a professional Operation Theatre Technician.

**Eligibility**

* 10+2 Science at least 50% in E and PCB

**Duration of the course**

* Degree Course--4 years
* Diploma Course—2 years

**Career prospects**

* At the completion of the course, students are allowed to assist Doctors in Operation Theatre.

**Institutes/colleges/universities**

* RAMA University (Phone no. 1800 1020 449)
* Shivalik Institute of Paramedical Technology – SIPT, Chandigarh
* Institute of Paramedical Technology,, New Delhi
* Anand Institute of Medical Science, Ludhyana.
* SGT University, Gurgaon.
* Integral University, Lucknow
* National Institute of Management and Technology, Noida
* Bhagwant University, Ajmer
* AISECT University, Bhopal
  1. **B.Sc. Optometry**

**Introduction**

* Optometry deals with vision which involves examining, diagnosing, managing and treating diseases of the eye. B.Sc. Optometry is a branch of medicine dealing with eye equipment which includes spectacles and contact lenses.
* It helps Optometrists to treat patients to improve their sight.
* Students studying in this course will be able to work as opticians, refractionists, optometrist and ophthalmic assistants and help people with eye problems.
* An Optometrist has to examine a patient for any sign of the disease that might might need medical attention.
* Optometrist treats patients for binocular vision, low vision and also for dyslexia.

**Eligibility**

* 10+2 science (PCB and PCM)

**Duration of course**

* 4 years

**Entrance Tests**

* EYECET
* AIIMS Exam
* JNU Entrance Exam.
* DU Entrance Exam and CMC.

**Institutes/colleges/universities**

* Ashray Institute of Paramedical Sciences, Delhi
* National Institute for Education and Research. Delhi
* Rajiv Gandhi Paramedical Institute, New Delhi
  1. **B.Sc. Perfusion technology**

**Introduction**

* It is defined as those functions necessary for the support, treatment, measurement, or supplementation of the cardiopulmonary and circulatory system of a patient.
* The course involves the study of Physiology, Pathology and associated equipment used to support and/or assume the function the heart and/or lungs during medical procedures.
* The Perfusion Technologist prepare and operates the heart-lung machine and other sophisticated equipment as directed by healthcare physicians.
* The Perfusionist utilizes technology such as heart/lung machines, ventricular assist devices and artificial hearts, as well as pharmacological inventions to maintain the patient during the period of circulatory support.

**Eligibility**

* 12+2 (PCB)

**Courses**

* UG and PG, M.Phil. and Ph.D.

**Institutions/colleges/universities**

* Rajiv Gandhi University of Health Sciences, RGUSH, Bangalore
* JSS Academy of Higher Education and Research, Trissur.
* Frontier lifeline Hospital, Chennai.
* St. Johns Medical College, Bangalore.
* Pt. Bhagwat Dayal Sharma Postgraduate Institute of Medical Science, Rohtak
* Ansal University, Gurgaon
  1. **B.Sc. Physician Assistant**
  2. **B.Sc. Renal Dialysis Technology**

**Introduction**

* The course is designed to prepare students to administer haemodialysis treatments for patients with renal failure, under the supervision of a nurse or a physician.
* The course imparts essential instruction to enrolled students in basic anatomy and physiology, dialysis preparation, dialysis prescriptions interpretation, extracorporeal circuit , dialyzer set up and maintenance, patient preparation, equipment monitoring, vein puncture and local anaesthesia administration, taking vital signs, documentation and communication , safety and sanitation, emergency interventions and professional standards and ethics.
* It covers specialties like cardiac care technology, dialysis technology, respiratory care technology, dialysis technology, imaging sciences technology, clinical medical lab among others.
* Renal failure or kidney diseases, results in the accumulation of excess of wastes and fluids in the blood that Dialysis Technicians help remove through the operation of a Dialysis machine.
* Dialysis Technicians must have a thorough knowledge of how the dialysis machine functions and interacts with the human body.
* They are also responsible for cleaning and sterilizing the dialysis machine.

**Eligibility**

10+2 (PCB & PCM)

**Courses:** UG and PG

**Admission Process**

Counseling after taking entrance test or direct admission in some cases.

**Major Entrance Tests**

JEE Mains, BITSAT, COMEDK,SRMJEE, UPSEE

**Institutes/Colleges/universities**

* Rajiv Gandhi Paramedical Institute , New Delhi.
* Jamia Hamdard University
* Jawahar lal Nehru University
  1. **B.Sc. Respiratory Therapy**

**Other Science Options**

* 1. **Allied Science.**
  2. **Animal Husbandry and Dairying Program**

**Introduction**

This academic program is also known a Animal Husbandry and Dairy Technology. It deals with the aspect such as animal care, breeding and raising of livestock of those animals who give us meat, fiber, milk, eggs or other useful products. Dairy farming deals with aspects such as-milk production, dairy products, storage and preservation, marketing etc. this discipline uses the concept of biology and chemistry to boost milk production in cattle. It also deals with management of their shelter, food and nutrition.

The academic program gives adequate importance to classroom lectures, and practical training. This program gives a sizeable importance to the laboratory sessions. Students are acquaint with the knowledge such as- disease in animals, treatment technologies, shelter management, food and nutrition after completion of this course.

**Eligibility**

10+2 Science

**Duration**

The duration of regular classroom program is 3 years.

**Course**

B.Sc.

M.Sc..after graduation students may opt for M.SC. PG diploma, PG Certification.

**Fee:** college fee varies depending upon certain factors from Rs.20,000- Rs.2,00,000.

**Admission Process**

Seats are distributed among the deserving students on the basis of merit marks scored by them in relevant entrance exam or board exam.

**Job Prospects**

* Poultry farms,
* Zoological Parks,
* Veterinary clinics,
* Dairy Farms,
* Relevant Govt. departments.

**Salary**

Starting salary depends upon different factors such as Job location, profile of the employer, academic performance, skill and aptitude, job profile etc.

**Colleges/Universities**

There are 40 Animal Husbandry & Dairy Science colleges in India. at Jaipur, Allahabad, Pune, Delhi Institute of Management and Technology—Delhi, Chennai, Mumbai, Tirunelveli, Lalitpur, Nanded, Etc

**Archeology (55)**

**Introduction**

The course is a subfield of anthropology. It exposes students to reconstruct extinct cultures from the artefacts as it studies the ancient and recent human past through material remains.

**Courses**

1. Bachelors of Arts in Ancient Indian Culture.
2. Bachelors of Arts in Ancient Indian History and Archaeology
3. Bachelors of Arts Archaeology and Museology
4. Master of Arts in Archaeology
5. Master of Arts in Museolog

**Eligibility**

10+2 with History

**Institutes/Universities**

1. Institute of Archaeology, New Delhi
2. National Museum Institute, New Delhi
3. Delhi Institute of Heritage Research and Management, New Delhi
4. MSG University, Baroda
5. University of Madras, Chennai
6. Tamil University, Thanjavur

**Shri Braj Basi Lal is one of the well-known** [**Indian**](https://en.wikipedia.org/wiki/India) [**archaeologists,**](https://en.wikipedia.org/wiki/Archaeologist) **He was the Director General of the** [**Archaeological Survey of India**](https://en.wikipedia.org/wiki/Archaeological_Survey_of_India) **(ASI) and a recipient of the** [**Padma**](https://en.wikipedia.org/wiki/Padma_Bhushan)[**Bhushan**](https://en.wikipedia.org/wiki/Padma_Bhushan) **Award in 2000.**

**Shri Braj Basi Lal developed interest in archaeology and in 1943, became a trainee in excavation under a British archaeologist,** [**Mortimer Wheeler,**](https://en.wikipedia.org/wiki/Mortimer_Wheeler) **and worked at sites such as** [**Taxila,**](https://en.wikipedia.org/wiki/Taxila) [**Harappa**](https://en.wikipedia.org/wiki/Harappa) **and** [**Sisupalgarh**](https://en.wikipedia.org/wiki/Sisupalgarh) **in** [**Odisha.**](https://en.wikipedia.org/wiki/Odisha)

* 1. **Art Restoration (56)**

**Introduction**

Art restoration is a specialized course which involves inspection, documentation, treatment and precautionary care of the art objects.

**Courses**

1. Bachelor's degree in art history, studio art, anthropology, archaeology
2. M. A. in art history, studio art, anthropology, archaeology
3. PhD in Art Conservation

**Eligibility**

Pass 12th class in any stream

**Institutes/Universities**

1. Jiwaji University, Gwalior, Madhya Pradesh
2. Kurukshetra University, Kurukshetra, Haryana
3. Mysore University, Mysuru, Kanataka
4. University of Madras, Chennai, Tamil Nadu
5. National Museum, New Delhi
6. University of Allahabad, Allahabad, Uttar Pradesh
   1. **Astronomy and Astrophysics (5)**

**Introduction**

Astronomy is a combination of physics, chemistry and mathematical principles/rules. Astrophysics can be called its offshoot. It deals with detailed study of the physical, chemical and dynamic properties of celestial objects. It also deals with the phenomena over and above Earth's atmosphere. There is associated study of calculations of orbits, gravitational forces, satellites, meteors, galaxies, comets, stars, planetary objects, planets, satellites etc. In Astrophysics, we explore and ensure properties/nature of the [astronomical objects](https://en.wikipedia.org/wiki/Astronomical_object) with the help of laws of physics and [chemistry.](https://en.wikipedia.org/wiki/Chemistry) There is also the field of Cosmology which studies the origin and evolution of the universe.

**Eligibility**

10 +2 with PCM

**Entrance Tests (PhD from IUCAA):**

1. IUCAA-NCRA Admission Test (INAT) Link Details: <http://inat.ncra.tifr.res.in/inat>
2. Joint Entrance Screening Test (JEST) Details: <http://www.jest.org.in/>
3. CSIR-UGC NET for JRF (Physics)

**Courses**

1. M.Sc. /M. Phil PhD (Physics)
2. M.Sc. Astronomy,
3. M.Sc. – Astrophysics
4. Integrated M. Tech- Ph. D (Tech.)
5. Program in Astronomical Instrumentation (Eligibility-B. Tech / BE degree in Electrical/ Instrumentation/ Electronics and Communications

/Computer Science/Mechanical Engineering or M. Sc degree in Physics / Electronic Science / Astrophysics/Applied, Mathematics /Applied Physics are also eligible to apply)

***Ph. D Astrophysics/Astronomy***

**Universities/Institutions/Colleges**

1. University of Delhi, Delhi
2. Indian Institute of Astrophysics, Bangalore
3. Indian Institute of Science, Bangalore
4. Raman Research Institute, Bangalore
5. Inter-University Centre for Astronomy and Astrophysics (IUCAA) – Pune
6. National Centre for Radio Astronomy - Tata Fundamental Research Institute – Pune.
7. Aryabhatta Research Institute of Observational Sciences (ARIES), Nainital
8. Harish-Chandra Research Institute (HRI), Allahabad
9. Osmania University, Hyderabad
10. Madras University, Chennai
    1. **Cardio vascular Care Technician, 2-years**
    2. **Clinical pathology.**
    3. **Computer Science (35)**

**Introduction**

Computer science is one of the known courses among engineering aspirants which aims on the basic elements of computer programming and networking. This course

include knowledge of design, implementation and management of information system of both hardware and software. It deals principally with the theory of computation and design of computational systems.

**Courses**

UG Courses

1. B.E. / B. Tech (Comp. Science, Info. Science, Info Tech)
2. B. Sc. (CS, IT, IS)
3. BCA.

PG Courses

1. ME / M. Tech
2. MCA.
3. M. Sc. (CS, IT)
4. PGDIT, PGDCA, etc. Doctoral Courses
5. Ph. D

**Eligibility**

10+2 with (PCM) and followed by Entrance Test

**Courses offered by NIELT (DOEACC)**

1. A level – Advanced diploma: equal to Bachelor’s degree
2. B level – equal to MCA degree
3. C level – equal o M. Tech

**Institutes/Universities**

1. Indian Institute of Technology Bombay, Mumbai
2. Indian Institute of Technology Delhi
3. Indian Institute of Technology Kanpur
4. Indian Institute of Technology Kharagpur
5. Delhi Technological University, Delhi
6. Indian Institute of Technology Banaras Hindu University, Varanasi
7. Indian Institute of Technology
8. Indian School of Mines Dhanbad, Jharkhand
9. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)
   1. **Curator (57)**

**Introduction**

A curator is a manager or overseer of a cultural heritage institution such as gallery, museum, library, or archives in charge of content and institution's collections and involved with the interpretation of heritage material.

**Courses**

1. M.A.
2. Ph.D

**Eligibility**

10+2 and Bachelor's degree in art, history, archaeology, museum studies or a related field

**Institutes/Universities/**

1. National Archives of India, Director General of Archives, National Archives of India (School of Archival Studies), New Delhi
2. National Museum Institute, History of Art, Conservation and Museology (Deemed to be University), New Delhi
   1. **Educational/vocational School Counseling (58)**

**Introduction**

The course deals in techniques of counseling individuals and providing group educational and vocational guidance services, crisis intervention for students, how to resolve behavioural, academic, and other problems.

**Courses**

1. Advanced Diploma in Child Guidance and Counseling
2. Diploma Course in Guidance and Counseling
3. Certificate Course in Counseling and Guidance
4. BA /MA in psychology, child development or social work

**Eligibility**

Graduate/ Master’s degree (Social Work /Psychology/Child Development/Community Resourc Management/ Development Communication Extension/Nursing/Special Education/ M. Ed. / B. Ed. with experience of teaching/working with children. The candidates applying for admission should be proficient in English.

**Institutions/Universities**

* Indira Gandhi National Open University, New Delhi [(http://www.ignou.ac.in/)](http://www.ignou.ac.in/)
* Ambedkar University, Delhi
* Dr. B.R. Ambedkar Open University, Telangana
* University of Delhi
* National Institute of Public Cooperation and Child Development, New Delhi
* National Council of Educational Research and Training, New Delhi

* 1. **Energy & Power—2 years, NIMS University, Jaipur**
  2. **Environmental Science (37)**

**Introduction**

Environmental science is the area of study that deals with the interactions of the physical, chemical, and biological elements of the environment and impact of these upon the living beings and the environment. Generally, environmental science is considered to be only natural science whereas it includes the study of social science and humanities also. Therefore, it is an interdisciplinary course.

**Institutes/Universities**

1. Allahabad University, Allahabad, Uttar Pradesh.
2. Delhi University, Delhi
3. School of Environmental Sciences, Jawaharlal Nehru University
4. Babasaheb Bhimrao Ambedkar University, Lucknow, Uttar Pradesh.
5. Banaras Hindu University, Varanasi, Uttar Pradesh.
6. Bangalore University, Bengaluru.
7. Barkatullah University, Bhopal.
8. Central University of Haryana, Mahendragarh,
9. Central University of Jammu, Samba
10. Central University of Jharkhand, Ranchi
11. Dr. B. R. Ambedkar Open University , Telangana

**Eligible**

10+2 examination or equivalent with Physics, Chemistry and Biology.

**Courses**

1. Bachelor’s Degree
2. Master’s Degree
3. Ph. D (Environmental Science) 10+2

**Scientists to hunt microbes beneath Antarctic ice sheet An international team of scientists will begin the new year hunting for microbes and other living specimens in an unexplored lake far beneath the surface of the Antarctic ice sheet. The expedition, known as SALSA (Sub glacial Antarctic Lakes Scientific Access), hopes to shed light on what kind of life can survive in such remote regions and serve as an on-Earth comparison for habitats deep inside Mars or on the ice-covered moons of Jupiter and Saturn.**

**(Source: zee news****)**

**3.96 Fire & Safety**

**Introduction**

Fire Engineering can be defined as, the application of scientific and engineering principles, rules and expert judgments, based on understanding of the phenomenon and effects of fire, its reactions and behavior of people, property and the environment from the destructive effects of fire.

**Program highlights**

* To impart professional training in Fire engineering, Safety and Disaster management to cater to the needs of private and public sectors, government and municipal fire services in and out of India.
* To provide qualified and well trained fire service and safety personnel for the above mentioned organizations.
* To upgrade and modernize the fire fighting equipments through research and development.

**Job opportunities**

* Safety Manager
* Fire protection technician
* Safety Inspector
* Safety supervisor
* Fire Officer

**Courses**

* Diploma in Industrial Safety & Disaster management (10+2 any stream)—1 year
* Diploma in Fire & Safety management (10+2 any Stream)—1 year
* B.Sc. in Fire Tech.& Industrial Safety management (12+2 any stream)—3-year
* PG Diploma – Health, Safety & Environment (B.Sc./BE/B. Tech from any stream)—

1 year

* PG Diploma—Fire & Safety Management (Graduate in any Stream)—1 year
* PG Diploma –Industrial Safety Management (Graduate in any Stream)—1 year

**Admission Procedure**

* Admissions in Fire & Safety Management Programs are through University Joint entrance test (UJET), STATES & National level entrance test.
* Direct admission can be obtained on merit cum preference basis.
  1. **Geo-informatics**
  2. **Green technology.**
  3. **Material Science**
  4. **Merchant Navy**
  5. **Meteorology (23)**

**Introduction**

Meteorology deals in atmospheric studies to know and predict weather and climate. It is the examination of the atmospheric and climate conditions effecting the earth and its positions.

**Eligibility**

10+2 with PCM/PCB

**Courses**

* B. Tech, B. Sc
* M. Tech, M. Sc.

**Institutions**

* cochin University of Science
* 1. **Metallurgy (22)**

**Introduction**

Metallurgy is a field of materials science and of materials engineering that deals with the physical and chemical behavior of metallic elements and their mixtures called alloys.

**Courses**

* Bachelor of Technology (B. Tech) in Metallurgy and Material Engineering.
* Master of Technology (M. Tech) in Material Science and Engineering
* B.E/B. Tech or equivalent in Metallurgical/Materials and Materials/Mechanical/Production/Ceramic Engineering.

**Eligibility**

10+2 with PCM

**Institutions/Universities**

* IIT Rurkee
* IIT, BHU
* National Institute of Technology, Tiruchirappalli
* Indian Institute of Engineering Science and Technology, Shibpur, Maharashtra
* Government Engineering College, Gandhinagar, Gujrat.
  1. **Monuments & Sculpture Restoration (59)**
  2. **Museology (60)**

**Introduction**

Museology is the branch of knowledge concerned with the study of the purposes and organization of museums with emphasis on development of museums and in evolving fresh methods and techniques to improve their working. It covers activities such as preservation, restoration and excavation of ancient monuments and the art material.

**Eligibility**

10+2

**Courses**

1. PG Diploma in Museology

(for some students who complete

1. M.S.C./ M.A. /B.A History Archaeology)
2. MA in Museology

**Institutes/Universities**

1. National Museum of Institute of History of Art (Delhi),
2. Bhartiya Kala Nidhi, Institute of Archaeology, ASI, New Delhi.
3. Aligarh Muslim University, Aligarh, Uttar Pradesh
4. Barkatullah University.
   1. **Natural-resources and sustainable development.**
   2. **Naturopathy (50)**
   3. **Nuclear Science and Technology.**
   4. **Oceanography (42)**
   5. **Oil & Gas**
   6. **Rehabilitation Psychology (62)**
   7. **Physical Science (26)**
   8. **Rehabilitation Psychology (62)**

**Introduction**

Rehabilitation psychology course is related to psychological principles for healing of patients who have disability due to injury or illness. The focus of this course is to address behavioural and mental health issues related to the injury or chronic condition that leads to disability and promote behaviour for positive adaptation to disability.

**Courses**

1. Post Graduate Diploma in Rehabilitation Psychology
2. Ph. D

**Eligibility**

Bachelor’s Degree in Psychology or should have studied psychology as one of the subjects from a recognized University.

**Institutions**

* Banaras Hindu University, Varanasi
* Department of Psychology - University of Delhi
* Ambedkar University (New Delhi)
* Tata Institute of Social Sciences, Mumbai
* Gautam Buddha University, Greater Noida, Gautam Budh Nagar
* Amity Institute Of Psychology And Allied Sciences, Noida
* The Maharaja Sayajirao University of Baroda, Vadodara
* Indira Gandhi National Open University, New Delhi [(http://www.ignou.ac.in/)](http://www.ignou.ac.in/)
* Dr.B.R. Ambedkar Open University , Telangana

**3.112.A Rehabilitation Therapy**

**Introduction**

Rehabilitation Therapy is a method which enables a person to recover from functional limitations after an injury, an illness or addiction. Rehabilitation assists people to restore their mental, emotional, physical, social and vocational wellbeing. Mental illness is also recovered with the assistance of rehabilitation. Physical and occupational therapy are also included in rehabilitation therapy.

**Courses**

1. Certificate in Rehabilitation Counseling
2. Diploma in Special Education (Hearing Impaired)
3. Diploma in Special Education (Visually Handicapped)
4. Diploma in Special Education (Mental Retardation)
5. Bachelor of Science (Hons.) Physical Therapy
6. Bachelor in Mental Retardation
7. Bachelor of Education (Hearing Impaired)
8. Bachelor of Education (Visually Handicapped)
9. Bachelor of Special Education (Hearing Impairment)
10. Master of Rehabilitation Therapy
11. Master of Occupational Therapy-Rehabilitation
12. Master of Science in Rehabilitation with Persons of Multiple Disabilities

**Eligibility**

10+2 with science subjects. The selection is usually made on the basis of entrance examinations conducted by the institute/university concerned. The duration of the bachelor’s degree course is 3-4 years.

**Institutions/Universities/Colleges**

* National Institute for the Mentally Handicapped (NIMH), Secunderabad, Telangana
* Pt. Deendayal Upadhyaya National Institute for the Physically Handicapped, New Delhi
* All India Institute of Physical Medicine and Rehabilitation, Mumbai, Maharashtra
* All India Institute of Speech & Hearing, Mysore, Karnataka
* Ali Yavar Jung National Institute for the Hearing Handicapped, Mumbai, Maharashtra
* Post Graduate Institute of Medical Education & Research, Chandigarh
  1. **Social Work (64)**

**Introduction**

Social work course is the study to prevent and alleviate the social problems in the society like social injustice, unemployment, destitution, etc. which has damaging effects and providing support to individuals through removal of barriers amongst the individuals, groups & communities.

**Eligibility**

* For BA Course: 10+2
* For PG course: Graduate in any stream preferably with sociology & psychology as options during graduation.
* Generally an All India level test is conducted by Universities followed by interview. Some Institutes offer admissions on the basis of marks obtained in last qualified exam.

**Courses**

1. BSW / BA – Bachelor’s in Social Work.
2. MSW – Master’s in Social Work.

**Institutions**

1. Tata Institute of social sciences, Mumbai.
2. Xavier institute of social science, Ranchi
3. Delhi School of Social work, Delhi.
4. Bangalore University. Bangalore.
5. Osmania University, Hyderabad
6. Mangalore University, Univ. Campus, Mangalagangotri
7. Madurai Kamaraj University, Madurai. University of Kerala, Thiruvananthapuram
8. Jamia Millia Islamia, New Delhi
9. Loyola College, Chennai

64

* 1. **Space Science**
  2. **Special Educator**

**Introduction**

Special education is the method of interventions designed to help individuals with special needs to help them achieve a higher level of personal self-sufficiency and success. This involves individually planned and systematically monitored teaching procedures, equipment and materials.

**Courses**

1. Diploma in Special Education
2. B.Ed. (Special Education)
3. M.Ed. (Special Education)
4. M. Phil. (Special Education)

**Eligibility**

Pass 10+2 from any subject for diploma courses.

Bachelor Degree in any discipline from any recognized University for higher courses.

**Institutes/Universities**

1. National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD), Chennai, Tamil Nadu
2. National Institute for the Mentally Handicapped, Secunderabad, Telangana
3. Indian Institute of Health Education & Research, Patna, Bihar

* 1. **Speech Language & hearing (66)**

**Introduction**

A paramedical and rehabilitation course, it involves studying the anatomy, physiology, pathology (diseases or disorders), of hearing and speech and rehabilitation. Speech Language is the science of verbal and symbolic expression of thoughts.

**Courses Course**

1. Diploma in Hearing, Language & Speech.
2. Bachelor of Audiology & Speech Language Pathology
3. Master of Audiology & Speech Language Pathology
4. Post Graduate Certificate Course in Auditory Verbal Therapy

**Eligibility**

* 10 + 2 pass or its equivalent with Physics, Chemistry, Biology & Mathematics

**Institutes/Universities**

1. All-India Institute of Medical Sciences, New Delhi

1. All India Institute of Speech and Hearing (AIISH), Mysore
2. Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh
3. Mani pal College of Allied Health Sciences (MCOAHS) Karnataka
4. Indian Institute of Health Education and Research, Patna, Bihar
5. Patna and MERF Institute of Speech and Hearing, Chennai
6. Institute of Speech and Hearing, Bangalore
   1. **Statistical Science (43)**

**Introduction**

Statistics is the study data and navigating common problems for drawing correct conclusions. This course is related to the filed such as areas as financial markets, sports, engineering, healthcare, marketing & sales, election campaigns, space, natural disasters, population studies, accidents, insurance, and deaths – statistics. Statistics deals with interpretation and aggregation of large complex data into simpler data. It develops from the field of probability in mathematics. Statistics also

**Courses Offered**

1. Diploma in Applied Maths.
2. Diploma in Maths with computer programming, etc.
3. Bachelor of Statistics (Hons)
4. Bachelor of Mathematics (Hons)
5. Bachelor’s in Statistical Methods.
6. Bachelor’s in Applied Mathematics & Statistics, etc.
7. Masters in Statistics
8. Masters in Mathematics.
9. M. Tech. in Quality & Reliability and operations research.
10. Masters of Science (MS) in Quantitative Economics
11. P.G. Dip in Applied Maths (Industrial maths)
12. M. Phil (Mathematics)
13. Ph. D in Mathematics

**Eligibility**

10+2 pass with Maths & English.

**Institutes/Universities**

1. Chennai Mathematical Institute, Chennai.
2. College of Engineering, Chennai.
3. Indian Institute of Technology, Kharagpur
4. Indian Statistical Institute, Kolkata (HQ)
5. Osmania University, Hyderabad.
6. Tata Institute of Fundamental Research, Mumbai.
7. The Institute of Mathematical Sciences (IMSC), Chennai.
8. The Mehta Research Institute of Mathematics & Mathematical Physics (MRI), Allahabad.
9. University of Hyderabad, Hyderabad.
10. SavitriBai Phule Pune University
    1. **Veterinary Science (44)**

**Introduction**

Veterinary Science is a subject related to the treatment of different animals from domestic pets to farmyard animals. The course content mixes a group of topics like anatomy, animal behaviour, animal husbandry, cell biology,

nutrition, physiology, genetics, epidemiology, pharmacology, infectious diseases, pathology and parasitology.

**Course**

* Bachelor of Veterinary Science & Animal Husbandry
* Bachelor of Veterinary Science
* Master of Veterinary Science

**Eligibility**

10+2 with biology, chemistry and physics and to qualify the entrance test conducted by Veterinary Council of India.

**Institutes/Universities**

* Indian Veterinary Research Institute, Uttar Pradesh
* College of Veterinary Sciences, CCS Haryana Agricultural University, Hisar, Haryana
* Bombay Veterinary Science College, Mumbai
* College of Veterinary Science & Animal Husbandry (Anand Agricultural University), Anand, Gujarat
* Chandra Shekhar Azad University of Agriculture and Technology, Kanpur, Uttar Pradesh.
* Jawharlal Nehru Krishi Vishwavidyalaya, Jabalpur
* Post Graduate Institute of Veterinary & Animal Sciences (PGIVAS), Akola
  1. **Wildlife Biology (45)**
  2. **Natural-resources and sustainable development**
  3. **Nutritionist**
  4. **Aeronautical Engineering (1)**

**Introduction**

* Aeronautical Engineering is one of the toughest Engineering course in India. the BE, B.Tech is a 4-year course full time course
* After successful completion of the course students can pursue their career as an Aeronautical Engineer.
* These engineers are then responsible for creating, developing normality in the technological field of space, defense, and aviation.

**Subjects involved in aeronautical Engineering**

* The full time 4-year course comprises of subjects like Material Science, fluid Dynamics, Essential of Propulsion, Structural Analysis, Aerodynamic theory, Material science and so on.
* These students can also get specialization like Navigation Guidance, communication, instrumentation, Methods of Production of products for Rockets, aero planes and Helicopters.

**Qualification Required**

UG level

* 10+2 with PCM with at least 50% in each subject.
* JEE for selection in Top IITs

PG level

* UG degree in Aeronautical/Aerospace or related engineering or passed both sections A and B of AMAeSI (AeSI-Aeronautical Society of India)

Doctoral level

* Must have completed post-graduation in Aeronautical/Aerospace Engineering
* Must have a valid GATE score.

**Courses**

* B. Teach in Aeronautical Engineering
* B.E in Aeronautical Engineering
* M. Tech in Aeronautical Engineering
* M.E.in Aeronautical Engineering
* M.E. in Avoinics
  1. **Aerospace Engineering**

**Introduction**

* B.Tech. Program in **Aerospace Engineering** is aimed at imparting sound knowledge in the fundamental areas of the discipline and also exposes students to advanced applications of this knowledge
* It deals with research, design, development, construction, testing of aircraft and spacecraft. It is divided into two major and overlapping branches: namely aeronautical engineering related with aircrafts in the earth’s atmosphere and astronautical engineering that deals with spacecrafts that operate outside the earth’s atmosphere.
* **Aerospace Engineering** is the discipline which is closest to what is popularly known as ***“Rocket Science”***
* it is a 4-year degree course

**Eligibility**

* 10+2 with PCM
* IIT considers score of JEE and other institutions have their own separate entrance exams.
* There are several Entrance exams such as (MHTCET) conducted by the Institutes for admission process.

**Courses**

* B. Tech
* Dual degree in combination of a Bachelor and a Master degree.
* M. Tech with specialization courses
* Ph. D programs

**Institutes/colleges/universities**

* IIT kharagpur, Madras, Chinnai
* The neotia College, Kalkate
* Chadigarh University
* BITS Hyderabad
* IIT Delhi
* Delhi Technology University
* National Institute of Technology, Delhi.
* Netaji Subhash University of technology, Delhi..
* Indian Institute of Engineering Science and Technology (IIEST), West Bengal.

**Course Fee**

* 6-9 lacs

**Job opportunities**

* ISRO, DRDO, HAL, ONGC and NAL (all government sectors)
* Private sectors such as, global Airlines, Aircraft companioes.

**Average starting Salary**: 5-10 lacs.

**Job positions**

1. Design Engineer,
2. Development Engineer,
3. Sensor Engineer, 4. Team Leader,
4. Filtration Manager etc.

**Avul Pakir Zainulabdeen Abdul Kalam**

His Excellency, 11th President of India was an aerospace scientist. He studied physics and aerospace engineering.

* 1. **Aircraft Maintenance Engineering**

**Introduction**

* This Engineering course is most demanding and high profile career in aviation sector in India.
* **Aircraft maintenance engineers** inspect, repair and overhaul civil aircraft.
* Most engineers specialize in either Mechanical or avionic engineering.
* Mechanical engineering includes engines and airframes.
* They also follow up and fix any problems that aircrew may have reported with the aircraft.
* Aircraft maintenance Engineering is not a degree or diploma course, but a training program.
* On completion of the training, a license is issued by the directorate of Civil Aviation (DGCA).
* During the training, lessons are imparted for **service** and **maintenance** of **Aircraft** so as to ensure flight safety.
* Students who wish to work in aviation industry can study Aerospace or Aeronautical Engineering at the B.Tech. level or study Aircraft Maintenance Engineering.
* Aeronautical or Aerospace Engineering deals with the design and manufacture of Aircraft while AME trains one for servicing the Aircraft.

**Eligibility**

* 10+2 with PCM, at least 50% marks in aggregate in PCM.

**Total training cost**

* Around 1.5 lacs.

**Institutions**

* Centre for Civil Aviation Training, New Delhi, approved by DGCA
* Fly Tech Aviation Academy, Bowenpally, Secundrabad (A.P**)**

**Job opportunities**

* Those who successfully complete the training and obtain DGCA’s license are eligible to get jobs in airports and aircraft manufacturing or maintenance firms with an attractive salivary. As more and more airlines start operations in the private sector, there will be an increase in demand for aircraft maintenance engineers and mechanics.
  1. **Architecture.**
* Architecture is the science that deals with the planning, designing, safety, affordability and supervision of construction work for houses, office buildings, skyscrapers, landscapes or entire cities.
* As children some of the first drawings we make are the pictures of homes.
* As adults some of the dreams we nurture most is that of making a home.
* Housing has been and will always remain one of the most significant aspect of our lives.
* With this comes the importance of people that gives shape to these dreams--**Architects**
* An Architect mainly deals with the planning, design and oversight of a building and the site surrounding it.
* They are well equipped with information on all building regulations, design aspect and other technicalities of making a home.
* Architecture as a profession is an equal blend of creativity and technicality.
* It is important for those who want to pursue architecture to really be sure that they have the aptitude and interest for it.
* Interest in designing and sketching, having passion enough to commit to the task and dreaming are some of the important attributes an aspiring architect must possess.

**The fundamentals**

* 10+2 with Math as one of the subjects.
* An aggregate of 50% marks is a criteria to be able to appear for the aptitude test called the National Aptitude Test in Architecture (NATA).
* This test measures the drawing and observation skills, sense of proportion, aesthetic sensitivity, critical thinking ability of the applicant that have been acquired over a long period of time and that are related to the field of architecture.
* Based on the scores, a National Council helps placed students in their preferred colleges
* The 5 year Bachelor degree is divided into 10 semesters that cover all the technical aspects of building design and construction.
* Aside of this, students also get to choose subject aspect of building such as interiors, project management, architectural journalism, Landscape etc as an elective.
* The final year of the course (9th and 10th semesters) is dedicated to the student’s final thesis paper and practical training under a practicing architect.
* The IITs consider score of JEE.

**Career prospect**

* The successful completion of this degree enables a student to get registered as an architect under the Council of Architect (CoA).
* Anny architect registered under the CoA is eligible to start practice either individually or by joining an already existing firm.
* There are also private-run institutions that offer diploma courses in architecture. However one has to be aware that only candidates passing out of institutes and colleges recognized by the CoA are eligible for registration as an architect.
* There are myriad of options to choose from at the Master’s level.
* The common ones are urban design, landscape architecture and interior design.
* There are less conventional subjects too which many students choose from such as;

Product design, Photography, architectural journalism, design management, design for retail experience, etc.

* It is said that “Architecture of any place is reflection of its people, culture and progress.

**College offering B.Arch.**

* School of planning and Architecture, JNTU, Masab Tank.
* Church of South India Institute of Technology (CSIIT), Secundrabad
* SVCA, Madha pur, Hyderabad.
* **School of Planning and Architecture, Delhi.**
* RV College, Bagalore.
* Sir JJ College, Mumbai.
* Amati University, Chattes Garh, Raipur.
* IIT Kharakpur, Tiruchirappalli, Nagpur, Ranchi, Roorkee, Rourkela,
* Malviya National Institute of Technology, Jaipur
* Indian Institute of Engineering Science and Technology, Howrah
* Maulana Azad Institute of Technology, Bhopal
* Hmr Institute of Technology & Management, Delhi (private)
* MBS School of Planning & Architecture, Delhi (Private)
* Vastu Kala Academy College of Architecture and interior Design, Delhi (private)
* School of Planning & Architecture, Delhi (Public College
* University School of Architecture and planning, New Delhi (Private)
* Indian Institute of Technology , Kharagpur
* Indian Institute of Technology (IIT), Roorkee
* Aligarh Muslim University Uttar Pradesh
* Indian Institute of Engineering Science and Technology (IIEST), Shibpur, West Bengal
* Birla Institute of Technology, Mesra, Ranchi
* Anna University, Chennai
* Centre for Environmental Planning and Technology (CEPT) University, Ahmadabad, Gujarat
* Swami Vivekanand Technical University Chhattisgarh
* School of Planning and Architecture Delhi
* National Institute of Technology (NIT),Patna
* National Institute of Technology, Hamirpur
* Jamia Millia Islamia University
* Jawaharlal Nehru Technological University Hyderabad
* Department of Architecture and Planning Engineering, Nagpur

**B. Arch admission process**

* In order to seek admission in B. Arch course, a candidate is required to appear for the NATA exam (National Aptitude test for Architecture) which is conducted by the Council of Architecture (CoA) to screen the candidates for selection.he
* Once the NATA score is out, states conduct a counseling process where on the basis of candidate’s rank, he/she is allotted a seat in any of top architecture colleges in India.
* Different States and Colleges may also follow a separate admission process.

**Architecture of any place is a reflection of its people, culture and progress. Today, as we progress into a time of real estate and construction boom, increasing number of people are being able to afford homes. Architects can be assured to have their hands and pockets full for a long time to come.**

* 1. **Advanced Engineering**
  2. **Aerospace Engineering (2)**

**Introduction**

Aerospace engineering is the branch of engineering which deals with the research, design, development, construction, testing, of aircraft and spacecraft. It is divided into two major and overlapping branches: aeronautical engineering related with aircrafts in the earth's atmosphere, and astronautically engineering that deals with spacecrafts that operate outside the earth's atmosphere. **Courses**

**Eligibility**

10+2 with PCM

IITs consider the score of JEE and other institutions have their own separate entrance exams.

**P.G. level**

Under Graduate degree in Aeronautical/Aerospace or related Engineering, or passed both sections.

**Doctor level**

Must have completed Post-graduation in Aeronautical/Aerospace Engineering.

**Courses**

1. B. Tech Degree
2. Dual Degree is the combination of a Bachelor and a Master degree
3. M. Tech degree with specialization courses
4. Ph. D Programs

**Institutes/Universities**

1. Indian Institute of Technology (IIT) Kharagpur
2. Indian Institute of Technology, Mumbai
3. Indian Institute of Technology, Chennai
4. Indian Institute of Technology, Madras
5. Punjab Engineering College (deemed to be University), Chandigarh
6. Indian Institute of Engineering Science and Technology (IIEST), Shibpur, West Bengal.

**Abdul Kalam**

**Known as the “missile man of India “, Avul Pakir Jainulabdeen Abdul Kalam, His Excellency, the** [**11th**](https://en.wikipedia.org/wiki/List_of_Presidents_of_India) [**President**](https://en.wikipedia.org/wiki/President_of_India)[**of India**](https://en.wikipedia.org/wiki/President_of_India) **was an aerospace scientist. He studied physics and aerospace engineering.**

**3.128Automobiles (6)**

**Automobile Engineering**

**Introduction**

The study of automotive engineering is to design, develop, fabricate, and test vehicles or vehicle components from the concept stage to production stage by incorporating various elements of engineering such as mechanical, electrical, electronic, software and safety engineering.

**Eligibility**

10 + 2 with Science for B. Tech / B.E courses percentage of marks in Science subjects as specified is required to qualify engineering competitive exam.

**Courses**

B. Tech in Automobile Eng.

Dual Courses B. Tech+ M. Tech

**Universities/Institutions/College**

1. University of Calicut, Malappuram, Kerala.
2. Maulana Abul Kalam Azad University of Technology, West Bengal
3. Technical University, Kota, Rajasthan
   1. **Artificial Intelligence (4)**

**Introduction**

Artificial Intelligence belongs to a field of science and engineering in which studies and research aim to develop intelligent computer machines that can perform tasks with human intelligence. It includes speech recognition, visual perception, logic and decision, multi-language translation and more. Digital bits of data is interpreted and turned into significant experiences and outcomes with aid / assistance of robotics, automation and sophisticated computer software and programs.

**Eligibility**

10+2 Science

**Courses**

1. [Machine Learning](http://www.csa.iisc.ac.in/academics/academics-courses-desc.php#E0270) (Intermediate Level)-Prerequisites Probability and Statistics (or equivalent course). Some background in linear algebra and optimization. (IISc Bangalore
2. Advanced Certification in Artificial Intelligence & Machine Learning (From IIIT-H )
3. B. Tech Computer Science & Engineering with specialization in AI & Machine Learning
4. B. Tech CS or IT/ECE/ME/IN or M.Sc. degree in CS/IT graphic design, information technology, health informatics, or equivalent.
5. After, B Tech, valid GATE scores is required for M.
6. Tech. CS/AI/IT, IC Technology and Bioinformatics

**Colleges/Institutions/Universities**

1. IISc Bangalore
2. IIT Bombay
3. IIT Kharagpur
4. IIIT Hyderabad, Allahabad
5. IIT Madras
6. University of Hyderabad

**In a revolutionary study, researchers have discovered that artificial intelligence could help detect Alzheimer`s diseases from brain scans much before actual diagnosis happens. Researchers at UC said that by the time a definitive diagnosis is made for Alzheimer`s, too many neurons are dead already, making it essentially irreversible. The early diagnosis could help doctors treat the degenerative disease much before it becomes difficult to contain.**

* 1. **Bio-technology Engineering (8)**

**Bio-technology Engineering**

Biotechnology engineering is a branch of engineering where technology is combined with biology for research and development. Biotechnology involves wide range of subjects such as engineering, genetics, biochemistry, microbiology and chemistry.

There are various applications of biotechnology in fields such as animal husbandry, growth of vaccines and medicines, agriculture, pollution control, energy production and conservation, healing of prolonged disease and ecological conservation such as

**Courses**

1. Gene therapy
2. Tissue culture
3. Immune technologies
4. Genetic Engineering
5. drug design
6. Stem cell techniques
7. New DNA technologies
8. Photosynthetic efficiency
9. Enzyme engineering and technology
10. Diploma in Biotechnology Engineering
11. Bachelor of Engineering in Biotechnology
12. Bachelor of Technology in Bioprocess Technology
13. Bachelor of Technology in Biotechnology and Biochemical Engineering
14. Bachelor of Technology in Biotechnology
15. Master of Engineering in Biotechnology
16. Master of Technology in Biotechnology

**Elligibility**

(10+2) examination with biology, maths and chemistry. For IITs, It is mandatory to qualify in the Joint Entrance Examinations (J.E.E). The duration for the course is 4 years.

**Colleges/universities**

1. IITs
2. Aarupadai Veedu Institute of Technology (AVIT), Chennai, Tamil Nadu,
3. Acharya Nagarjuna University (ANU), Guntur, Guntur, Andhra Pradesh,
4. Alagappa University, Karaikudi, Karaikudi, Tamil Nadu,

**Institutes**

8

* 1. **Bio-medical Engineering (7)**

**Bio-medical Engineering**

**Introduction**

Biomedical engineering is the study of engineering as applied in the medical sector such as manufacturing prostheses, medical equipment, diagnostic devices and drugs. Professionals in this field are known as a biomedical engineers. The biomedical engineers utilize the engineering methods and theories to enhance health care. Orthopedics and rehabilitation engineering, molecular, cellular and tissue engineering are also a part of this discipline.

**Courses**

1. B.Sc. in Bio medical Science
2. B Tech in Biomedical Engineering
3. Dual Degree programmes
4. Ph. D programme in Bio medical science

**Eligibility**

(10+2) examination with biology, maths and chemistry.

For IITs, It is mandatory to qualify in the Joint Entrance Examinations (J.E.E). The duration for the course is 4 years.

**Institutes**/**Universities**

1. All India Institute of Medical Sciences New Delhi
2. Dr. B.R. Ambedkar Centre of Biomedical Research, University of Delhi,
3. Indian Institute of Technology (BHU) Varanasi
4. Department of Biomedical Engineering, (University College of Engineering) Osmania University, Hyderabad
5. Govt. Model Engineering College, Kochi, Kerala
   1. **Ceramic Engineering (9)**

**Ceramics Engineering**

**Introduction**

Ceramic engineering is the science and technology of creating objects from inorganic, non-metallic materials. As ceramics are heat resistant, they are used in a wide range of industries, including mining, aerospace, medicine, refinery, food and chemical industries, packaging science, electronics, industrial and transmission electricity, and guided light wave transmission.

**Course**

1. B. Tech
2. M. Tech

**E**

(10+2) examination with biology, maths and chemistry. For IITs, It is mandatory to qualify in the Joint Entrance Examinations (J.E.E). The duration for the course is 4 years.

**Institutes/Universities**

1. IITs
2. Andhra University College of Engineering, Visakhapatnam - Andhra Pradesh
3. Government College of Engineering and Ceramic Technology – Kolkata
4. Rajasthan Technical University, Kota, Rajasthan
   1. **Chemical Engineering (10)**

**Introduction**

Chemical Engineering is the design and maintenance of chemical plants and the development of chemical processes for converting raw materials or chemicals into valuable forms including those used to remove chemicals from waste materials, to enable large-scale manufacture. It combines knowledge of Chemistry and Engineering for the production of chemicals and related by-products.

This branch of engineering is a varied field, covering areas from biotechnology and nanotechnology to mineral processing. It covers various fields of chemical technology in mineral based industries, petrochemical plants, pharmaceuticals, synthetic fibres, petroleum refining plants etc. Chemical engineers design and operate chemical plants and improve methods of production.

**Courses**

B. Tech

M. Tech

**Eligibility**

10+2 pass with physics, chemistry and mathematics from recognized Board of examination. Most of the colleges offer admission on the basis of score obtained in national/state level entrance test.

**Institutes/Universities/Colleges**

Indian Institute of Technology (IIT) Kharagpur

Indian Institute of Technology (IIT) Kanpur

Indian institute of Technology (Madras)

Andhra University, Visakhapatnam

Rajasthan Technical University, Kota, Rajasthan

Guru Gobind Singh Indraprastha University, Delhi

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I

* 1. **Civil Engineering (11)**

**Introduction**

Civil Engineering involves planning, designing and executing structural works. The course deals with a wide variety of engineering tasks including designing, supervision and construction activities of public works like roads, bridges, tunnels, buildings, airports, dams, water works, sewage systems, ports etc. and offers a multitude of challenging career opportunities. A civil engineer is responsible for planning and designing a project, constructing the project to the required scale, and maintenance of the product.

The major specialisations within civil engineering are structural, water resources, environmental, construction, transportation, geo-technical engineering etc.

**Coursesourss**

1. B. Tech
2. M. Tech (Dual Degree)
3. Ph. D

**Eligibility**

10+2 with Physics, Chemistry, and Mathematics as core subjects.

**Institutions/universitiesUniversities**

1. Indian Institute of Technology (IIT) Kharagpur
2. Indian Institute of Technology (IIT) Kanpur
3. Andhra University, Visakhapatnam
4. Calicut University, Malappuram, Kerala.
5. Aliah University, Kolkata
6. Rajasthan Technical University, Kota, Rajasthan
7. Guru Gobind Singh Indraprastha University, Delhi
8. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)

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* 1. **Cloud Computing (Electronics & communication with specialization in**

**Cloud computing & virtualization Technology )**

* 1. **Communication Engineering,**
  2. **Computer Applications. (33)**
  3. **Computer Science Engineering (12)**

**Introduction**

Computer Science Engineering involves both computer science and electronics engineering. It includes testing and designing of computer components. There are two types of computer engineers. Computer software engineers and computer hardware engineers.

**Courses**

1. B. Tech Computer Science and Engineering
2. B. Tech Computer Science and Information Technology
3. B. Tech Computer Software Engineering
4. Computer Science and Engineering

**Eligibility**

(10+2) with biology, maths and chemistry. For IITs, It is mandatory to qualify in the Joint Entrance Examinations (J.E.E). The duration for this course is 4 years

**InsUniversities/Institutions/Colleges**

1. Indian Institute of Technology (IIT) Kharagpur
2. Indian Institute of Technology (IIT) Kanpur
3. Indian institute of Technology (Madras)
4. Rajasthan Technical University, Kota, Rajasthan
   1. **Cyber Security (35)**
   2. **Electrical Engineering**
   3. **Electrical & electronics Engineering (13)**

**Introduction**

Electrical and electronics engineering is about use of technology ranging from global positioning systems to electrical power generators. These engineers are responsible for designing, developing, testing as well supervising the production of electrical and electronic equipment and machinery.

Specialization in Electrical and electronics engineering include areas like power generation, transmission and distribution; communications; manufacture of electrical equipment etc. or one particular specialty within these area; e.g. industrial robot control systems or aviation electronics.

There are Microwave engineers who produce radar, communications, and fibres optics systems. Communications and signal processing as in CD players and high definition TV. Electrical engineers also design and implement automatic control systems such as airplane guidance and autopilot systems.

**Courses**

1. B. Tech
2. M. Tech

**Eligibility**

Pass in Higher Secondary (10+2) or its equivalent (Physics, Chemistry and Mathematics),

**Institutes/Universities**

IITs including

1. Indian Institute of Technology (IIT) Kharagpur
2. Indian Institute of Technology (IIT) Kanpur
3. Andhra University, Visakhapatnam

13

* 1. **Electronics**

**Introduction**

Electronic Engineering is an electrical engineering discipline which utilizes nonlinear and active electrical components to design electronic circuits, devises, integrated circuits and their systems.

* 1. **Electronics & Communication Engineering (14)**

**Introduction**

Electronics and Communication Engineering deal with electronic devices and software interfaces. It helps to increase productivity in various industries such as oil, energy, agriculture, and telecommunication media including television, radio and computers. The course is also applied to many other important sectors such as steel, petroleum and chemical industries; healthcare industry; and transportation industry.

**Eligibility**

(10+2) examination with biology, maths and chemistry. For IITs, It is mandatory to qualify in the Joint Entrance Examinations (J.E.E). The duration for the course is 4 years.

**Courses**

1. Diploma in Electronics and Communication Engineering

2. Bachelor of Engineering in Electronics & Communication Engineering

3. Master of Engineering in Electronics & Communication Engineering

**Institutes/Universities**

1. IITs

2. Indian Institute of Technology (IIT) Kharagpur

3. Guru Gobind Singh Indraprastha University, Delhi

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| --- | --- | --- |
|  |  |  |

* 1. **Fashion Technology (B.Tech.)**
  2. **Geo-informatics,**
  3. **Geo-science,**
  4. **Industrial Engineering (15)**

**Introduction**

Even though the term industrial engineering is originally applied to manufacturing, it has extended its service to fields like operations research, systems engineering, ergonomics and quality engineering.

Industrial engineering is also known as

Operations management, Production Engineering, Manufacturing Engineering or Manufacturing Systems Engineering.

In healthcare, Industrial Engineers are more commonly known as Management Engineers or Health Systems Engineers.

**Courses**

1. B. Tech
2. M. Tech

**Eligibility**

10+2

**Universities/Institutions**

1. Indian Institute of Technology (IIT), Kharagpur
2. Indian Institute of Technology (IIT), Kanpur
   1. **Information, communication and Entertainment (16)**

**Information, Communication, Entertainment**

**Introduction**

This is the age of Information- Communication-Entertainment (ICE) and massive expansion in broadcasting with the introduction of more television channels, direct broadcast satellites, T.V./Computer link ups, cable T.V. and rapid growth in both All India Radio and other broadcasting services particularly FM.

**Courses**

1. B.A Mass Communication
2. B.A. Journalism

**Eligibility**

After 10+2

**Colleges/Institutions/Universities**

1. Xaviers Institute of Communication (XIC),
2. Indraprastha College, Delhi University, New Delhi (Mass Communication)
3. Lady Sri Ram College, Delhi University, New Delhi (BA Hons, Journalism)
4. Communication and Culture Media Education Programme. Loyola College, Madras (Mass Communication)

**After Graduation**

1. International Institute of Information Technology, Hyderabad, Andhra Pradesh.
2. Chitrabani, Kolkata
3. Mass Communication Research Centre, Jamia, New Delhi
4. Indian Institute of Mass Communication, JNU Campus, New Delhi
5. Mudra Institute of Communication, Ahmedabad-
6. Satyajit Ray Film And Television Institute, Kolkata
7. National Institute of design, Ahmedabad
8. Film And Television Institute of India, Pune
9. NIMT Institute of Mass Communication, Uttar Pradesh.
   1. **Instrumentation Engineering (17)**

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| --- | --- | --- |
| **Introduction** |  |  |

Instrumentation engineering is a branch of electrical and electronics engineering that deals with the study of engineering principles and procedures of computing instruments used in designing and assembling automated systems.

**Courses**

B.E /B. Tech.

M.E. / M. Tech.

M. Phil.

Ph. D

|  |
| --- |
|  |

**Eligibility**

10+2 with Physics, Chemistry, and Mathematics as core subjects. Students must go through entrance exams such as JEE (Main) & JEE (Advance) for admissions to B. Tech. courses.

**Institutes/Universities**

* Bangalore Institute of Technology, Karnataka
* Bharti Vidyapeeth College of Engineering, Maharashtra
* BMS College Of Engineering, Karnataka
* Dayananda Sagar Institute of Technology, Karnataka
* M S Ramaiah Institute of Technology, Karnataka
  1. **Manufacturing Science & Engineering (18)**

**Introduction**

Manufacturing Science and Engineering is the production of goods for use or sale using labour and machines, tools, chemical and biological processing, or formulation. Applied to industrial production, raw materials are transformed into finished goods on a large scale to be used for manufacturing other, more complex products, such as aircrafts, household appliances or automobiles.

**Courses**

B. E./ B. Tech.

**Eligibility**

10+2 or equivalent,

The candidate must have a valid Joint Entrance Examination score.

**Institutes/Universities**

Indian Institute of Technology, Kharagpur

Ranchi University, Ranchi, Jharkhand.

Siddaganga Institute of Technology, Tumkur, Karnatak

* 1. **Marine Engineering (19)**
  2. **Material Science and Engineering**
  3. **Mechanical Engineering (20)**

**Introduction**

Mechanical engineering deals with application of the principles of mechanics and energy to design machines and devices right from automobiles, trucks, airplanes to trains tractors, fax machines or even power plants.

Robotic inspection systems, Cryogenic technology, Laser material processing are also some new emerging areas of study.

**Courses**

Certificate in Mechanic of four Wheeler

Diploma in Mechatronics

Diploma in Mechanical Engineering

Bachelor of Engineering in Mechanical Engineering

Bachelor of Technology in Mechanical & Automation Engineering

Bachelor of Technology in Mechanical Engineering

Bachelor of Technology in Mechatronics

Master of Engineering in Mechanical Engineering

Master of Engineering in Tool Design

Master of Technology in Mechanical Engineering

Doctor of Philosophy in Mechanical Engineering

**Eligibility**

(1+2) with biology, maths and chemistry. For IITs, It is mandatory to qualify in the Joint Entrance Examinations. The duration of the course is 4 years.

**Institutes/Universities**

**IITS**

Achutha Institute of Technology, Bangalore (Karnataka)

Reva Institute of Technology and Management, Bangalore (Karnataka)

HKBK College of Engineering, Bangalore (Karnataka)

Mechanical Engineering is a very popular course and perhaps one of the oldest also. The list of institutes is exhaustive apart from the few mentioned here. A number of other institutes conduct this course

* 1. **Mecha-tronics,**
  2. **Medical Electronics Engineering (21)**

**Introduction**

Medical Electronics engineering relates to the combined study of biology with engineering principles for developing artificial organs, prostheses (artificial devices that replace missing body parts), magnetic resonance imaging (MRI) and other health management systems.

The course also offers specialisation in biomechanics, rehabilitation and orthopaedic engineering.

**Courses**

Bachelor of Engineering in Medical Electronics

Bachelor of Technology in Medical Electronics

Bachelor of Engineering in Medical Electronics Engineering

**Eligibility**

(10+2) examination with biology, maths and chemistry. For IITs, it is mandatory to qualify in the Joint Entrance Examinations. The duration of the course is 4 years.

**Institutes**/**Universities**

IITs

BMS College of Engineering, Bengaluru.

Dayananda Sagar College of Engineering, Bengaluru. AFFILIATED TO VTU, APPROVED BY AICTE & UGC, ACCREDITED BY NAAC

Dr. Ambedkar Institute of Technology, Bangalore. affiliated to Visvesvaraya Technological University, Belgaum and accredited by AICTE

* 1. **Merchant Navy**
  2. **Mining Engineering (24)**

**Introduction**

Mining engineering, also referred as mineral engineering, deals with the study of the techniques to extract and process minerals from their natural surroundings. A mining engineer has to study ore reserve analysis, operations and planning, mine health and safety, drilling, blasting, ventilation and related topics.

**Courses**

* BE Mining Engineering
* B. Tech Mining Engineering
* Diploma in Mining and Mine Surveying Engineering
* ME Mining Engineering
* M. Tech Mining Engineering
* PG Research Programme on Materials Resource Engineering
* Ph. D Mining Engineering
* Postgraduate Diploma in Mineral Engineering

**Eligibility**

(10+2) biology, maths and chemistry. For IITs, it is mandatory to qualify in the Joint Entrance Examinations (JEE). The duration of the course is 4 year

**Institutes/Universities**

* IITs
* Dr. T. Thimmaiah Institute of Technology, Kolar (Karnataka)
* Anna University College of Engineering, Chennai (Tamil Nadu)
* Bengal Engineering and Science University, Howrah (West Bengal)
* Government Engineering College, Bilaspur (Chhattisgarh)
* Jai Narain Vyas University: Faculty of Engineering and Architecture, Jodhpur (Rajasthan)
* Maharana Pratap University of Agriculture and Technology: College of Technology and Engineering, Udaipur (Rajasthan)
* Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur (Maharashtra)

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* 1. **Naval Architecture Engineering (25)**

**Introduction**

The course in Naval Architecture primarily relates to the design, construction or maintenance of all types of marine vessels such as ships, boats, oil and gas tankers, containers, passenger ships, ferries etc.

**Courses Offered**

BE course, duration: 04 year

**Eligibility**

(10+2) or equivalent examination with physics, Chemistry, Mathematics and English as separate subjects.

**Institutes/Universities**

1. Andhra University College of Engineering
2. IIT, Kharagpur
3. IIT, Chennai
4. Kochi University of Science and Technology.
5. Institute of Shipbuilding, Goa
   1. **Nuclear Science and Technology (Nuclear Engineering)**

**Introduction**

* Nuclear science and Technology is the cutting edge technology in the world today.
* The importance of nuclear power and its immense potential has long been recognized, but, the technology was still in an infant state.
* As the energy crisis in the world intensifies, the price of fuel is going up.
* In this situation, nuclear energy presents the most viable long term method of dealing with the energy crisis.
* More and more nuclear power plants have been set up all over the country and many more have been planned to satisfy the rising demand for electricity
* In this situation, there exists a good scope of career and advancement for the young and dynamic scientists in nuclear Science and Technology.

**Courses recognized under nuclear Science and technology**

1. B.Sc. Nuclear medicine Technology
2. Diploma in radiation Medicine
3. M.Tech. Nuclear Medicine
4. MD in Nuclear Medicine
5. PG in Nuclear Engineering
6. PG in Nuclear Science and Technology
7. PhD in Nuclear Medicine
8. Ph.D. in Theoretical Nuclear Physics

**Job Opportunities**

* Job in Nuclear Power Plant in various capacities depending on your specialization. Jobs may be; a Project Engineer, Chemical Engineer, Design Engineer, Control and Instrumental Engineer and Nuclear, Mechanical or Structural Engineer.
* Physicist either in Nuclear Plants or in Nuclear Research facilities.
* Nuclear Weapon Engineer, after higher specialization.
* As Manager of Nuclear waste material
* Academic career in Nuclear Science Technology and research

**Eligibility:**

* 10+2 PCM
* Sit for the entrance examinations conducted by various Public and Private Institutes

**Duration the of course:** 4 years

**Institutes/colleges/institutes**

1. Koneru lakshmaiya University, Guntur.
2. S.R.M. University, Kanchipuram
3. Manipal Institute of Technology, Karnataka.
4. School of Nuclear aaaaenergy, Pandit Deen Dayal Petroleum University, Gandhi Nagar.
5. Amity School of Nuclear Science and Technology.
6. Jawaharlal Nehru Technological University, Kakinada.
   1. **Oceanography**
   2. **Oil & Gas.**
   3. **Petroleum Engineer**

**Introduction**

Petroleum Engineering is a discipline concerned with the surface activities related to the production of hydrocarbons—which can be either crude oilor natural gas.

These are the activities within the upstream sector of the oil and gas industry that includes exploration for hydrocarbons.

Petroleum Engineering is broadly consists of different areas such as drilling, reservoir and production stream.

Drilling deals with designing and implementing procedures to drill wells as safely and economically as possible, and depending on its purpose. It may be used for analyzing hydrocarbon pools (major fossils such as coal, petroleum and natural gas are hydrocarbons).

Reservoir Engineering deals with study of such pools and work out on ways to utilize it.

Production Engineering comes into play after the reservoir has been understood and wells have been drilled and hydrocarbon begins to flow.

An important challenge facing the profession is high risk in investment under high degree of uncertainty in oil and gas reservoirs.

Qualification: PCM in class 11th and 12th.

Test: All India Entrance test such as JEE

After graduation: M. Tech and later Ph.D

**Institutes and URLS:**

* Indian School of Mines
* Pandit Deendayal Petroleum University, Gandhi Nagar ([www.pdpu.ac.in](http://www.pdpu.ac.in))
* Maharashtra Institute of Technology, Pune ([www.mitpune.com](http://www.mitpune.com))
* University of Petroleum and Energy Studies, Dehradun ([www.upes.ac.in](http://www.upes.ac.in))
* Rajiv Gandhi Institute of Petroleum Technology, Rae Bareli ([www.rgipt.in](http://www.rgipt.in))
* CSIR-Indian Institute of Petroleum, Dehradun ([www.iip.res.in](http://www.iip.res.in))
* Dibrugarh University, Assam ([www.dibru.ac.in/page.php?cat=Deparment](http://www.dibru.ac.in/page.php?cat=Deparment) &id=Petrolem%20Technology)

**Pros and cons:**

* The job is challenging
* Long working hours of shore: 7A.M. to 8.30 P.M.
* Exposure to best-in-class technology
* High Salary (1.5 times more than that his counterparts in other core sectors. Those with added skills 2-3 times as much their professional growth is very fast)
* Wide spectrum of activities.
* Work in remote locations
* Jobs are concentrated in certain parts of the world.
* Physically strenuous.

Skill/traits

* Job related to data processing and interpretations are done with the help of state-of-the-art software running on sophisticated hardware.
* Hence one is required to be technologically savvy.
* Drilling involves dealing with subsurface conditions of pressure and temperature and requires high skill with machinery and related judgment.

**To be a successful petroleum engineer, one should have knowledge of geology, geophysics, reservoir engineering and management, and be ready to work in synergy.**

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* 1. **Polymer Engineering (27)**

**Introduction**

The course in Polymer (plastics and rubbers) technology deals with materials and the application which ranges from construction, packing, decorative items to automobiles, aircrafts etc.

**Courses**

1. B.E. Polymer Science and Chemical Technology
2. B.E. Polymer Technology
3. B. Tech Polymer Science and Technology
4. M.E. Polymer Technology
5. M. Tech Polymer Science and Technology
6. Ph. D Polymer Science and Technology

**Eligibility**

10+2 with biology, maths and chemistry. For IITs, It is mandatory to qualify in the Joint Entrance Examinations (J.E.E). The duration of this course is 4 years

**Institutes**/**Universities**

1. Indian Institute of Technology (IIT), New Delhi
2. Birla Institute of Technology, Mesra, Ranchi
3. Sant Longowal Institute of Engineering and Technology, Sangrur, Punjab
4. Cochin University of Science and Technology (CUSAT), Kochi
5. Maharashtra Institute of Technology (MIT), Pune
6. National Institute of Technology, Calicut
7. Delhi College of Engineering, New Delhi
8. University College of Engineering, Thodupuzha, Kerala
9. VRS & YRN College of Technology, Department of Oil Technology, Chirala, Andhra Pradesh
   1. **Robotics (28)**

ROBOTICS

**Introduction**

Robotics is an inter-disciplinary course and students of mechanical engineering, electrical engineering, instrumentation engineering or computer engineering can join this field. The Robotics and artificial intelligence are interlaced and there is option at the Master's level.

**Eligibility**

10+2 or equivalent education in Science stream

**Courses**

1. Bachelor of Technology
2. Bachelor of Engineering
3. (In mechanical engineering, electrical engineering, instrumentation engineering or computer engineering)
4. M. Tech in Robotics and M Tech in Artificial Intelligence
5. M. Tech in Robotics Engineering
6. M. Tech in Automation and Robotics
7. Diploma in Robotics

**Institutes/Universities**

1. IISC Bangalore
2. University of Hyderabad
3. IIT, Mumbai, Chennai, Kharagpur, Delhi, Kanpur
4. Birla Institute of Technology and Science., Pilani/Mesra
5. National Institute of Technology (NIT), Silchar

2

* 1. **Space Science.**
  2. **Techno-legal etc.**
  3. **Textile Engineering (29)**

TEXTILE ENGINEERING

**Introduction**

Textile engineering courses deal with the application of scientific and engineering principles to the design and control of all aspects of fibres, textiles, and apparel processes, products, and machinery.

**Eligibility**

10th / 12th for Diploma in Textile Engineering

10+2 with PCM for B.E. / B. Tech.

B. E. /B. Tech for M. Tech / Post Graduate Diploma in Textile

**Institutes/Universities**

1. Government SKSJ Technological Institute, K R Circle, Bengaluru
2. College of Textile Technology, Behrampur, Murshidabad
3. Institute of Textile Technology, Cuttack, Odisha
4. Indian Institute of Technology, Delhi
5. Government Central Textile Institute, Kanpur.
6. South Gujarat University, College of Engineering & Technology, Surat, Gujarat.
7. University of Bombay, Department of Chemical Technology, Mumbai, Maharashtra

**Courses**

1. 3 year Diploma course in Textile Engineering/ Textile Chemical Processing Technology (DCTPT), Textile Colour and Design (DTCD)
2. B.E./ B. Tech in Textile Engg. / Textile chemistry / Textile Technology / Textile plant Engineering.
3. M. Tech in Textile / Post Graduate Diploma in Textile Chemical Processing (PGDTCP)

29

**Medical Science & Dentistry**

* 1. **MBBS, (M. D/M.S. in all branches)**
  2. **BUMS.(53)**

**Introduction**

Unani means Greece where the Unani System of Medicine originated. BOKHRATH (Hippocrates) founded it in 460 BC approximately and is called as Father of Unani Medicine. Unani medicine works on the basis of ‘humoral theory’ (relating to four bodily fluids) where each humour denotes a precise disposition in a human being. In Unani medicine, the plants, minerals and animal products are used for healing purposes and for restoration of a person’s original humoral constituents. Unani System is one of internationally accepted treatments of medicine in present day also.

**Eligibility**

* For BUMS – 10+2 or equivalent certification with Science
* After BUMS/Graduation
* AIAPGET -2018 can apply for admission to MD/MS (Unani

**Courses**

1. Bachelor of Unani Medicine and Surgery (BUMS)
2. Kamil-e-Tob-o-Jarahat
3. Mahir-e-Tibb
4. MD/MS/PG (Unani)

**Institutions/colleges/Universities**

1. National Institute of Unani Medicine, Bangaluru
2. Delhi University (Faculty of Ayurvedic & Unani Medicine)
3. A & U Tibbia College & Hospital, Delhi
4. Rajiv Gandhi University of Health Sciences, Bengaluru, Karnataka
5. Dr NTR University Of Health Sciences, Vijayawada, AP
6. Kaloji Narayana Rao University of Health Sciences, Telangana, Warangal
7. Aligarh Muslim University, Aligarh
   1. **BAMS (47)**

**Introduction**

Ayurveda, an ancient system of medicine evolved approximately around 600 BC in India and has many followers across the world today. Ayurveda makes use of natural – plants, herbs and minerals to produce medicines. Also included in course of Ayurveda are body massage, meditation and basic dietary plans which according to many practitioners have no side effects as it is based on non-invasive treatment practices.

Ayurveda has been recognized by World Health Organization.

**Courses**

1. Certificate course in Ayurvedic Cosmetics Duration: 1 year
2. Diploma in Ayurvedic Pharmacy (D.Pharma) Duration: 2 years
3. Bachelor of Ayurvedic Medicine & Surgery or "Ayurvedacharya" (B.A.M.S.)
4. Bachelor in Ayurvedic Pharmacy (B.Pharma) Duration: 4 years
5. Master in Ayurvedic Pharmacy (M.Pharma) Duration: 2 years
6. Master of Science in Medicinal Plants (M.Sc. in Medicinal Plants)

Duration: 2 years

1. Masters in Ayurveda (MD)
2. PG Diploma in Ayurvedic Drug Standardisation Duration: 2 years

**Eligibility**

10+ 2 with Physics, Chemistry & Biology

**Institutes/Universities**

1. All India Institute of Ayurveda, New Delhi.
2. Ayurvedic & Uunani Tibbia College & Hospital, New Delhi.
3. Faculty of Ayurveda, Institute of Medical Sciences, BHU, Varanasi, Uttar Pradesh.
4. Rajiv Gandhi Govt. Post Graduate Ayurvedic Kangra, Himachal Pradesh.
5. Govt. Akhandanand Ayurvedic College, Ahmedabad, Gujarat
6. Govt. Ayurvedic College & Hospital, Lucknow, Uttar Pradesh.
7. Govt. Ayurvedic College & Hospital, Jagatganj, Varanasi, Uttar Pradesh.
8. National Institute of Ayurveda, Jaipur, Rajasthan.
9. College of Ayurveda of Rajasthan Ayurvedic University, Jodhpur, Rajasthan
10. Govt. Rishikul Ayurvedic College & Hospital, Hardwar, Uttarkhand.
11. J. B. Roy Govt. Ayurvedic Medical College & Hospital, Kolkata, West Bengal

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* 1. **BHMS (49)--Homeopathy**

**Introduction**

Homeopathy is practiced worldwide for healing, curation and therapeutic purposes. It is an all-inclusive practice of treatment wherein a patient is treated while assessing all aspects of symptoms and health problems for restoration of overall health. In this unique therapeutic system of treatment, certain natural substances are diluted and used in various forms for treatment of many ailments. The courses are designed to give insight about Homeopathy medicine, its foundation, analysis, evaluation, surgery etc. and encompass both clinical and pre-clinical subjects with proper emphasis on theoretical as well as hands on practical sessions.

**Courses**

1. Bachelor of Homeopathic Medicine & Surgery (BHMS)
2. MD (Homeopathy)

**Eligibility**

ForBHMS - 10+2 or equivalent exam with Physics, Chemistry and Biology.

For MD (Hom.)- B.H.M.S.

**Institutes/Universities**

1. JSPS Govt. Homoeopathic Medical College, Hyderabad
2. Nehru Homoeopathic Medical College and Hospital (NHMC&H) Delhi (University of Delhi)
3. Dr. Gururaju Government Homoeopathic Medical College and Hospital,, Andhra Pradesh
4. Dr. NTR University of Health Sciences Vijayawada Andhra Pradesh
5. The Tamil Nadu Dr. M.G.R. Medical University, Chennai

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* 1. **Siddha (52)**

**Introduction**

Siddha is one of oldest Indian systems of medicine which has its roots in south India and is popular worldwide. Therapeutic in nature, the system works on the belief that human body is made of five basic elements namely, earth, water, fire, air and sky and the treatment deals with balancing these elements for healthy and disease free life . The Central Council of Indian Medicine controls the education of Siddha system in the country.

**Courses**

1. Siddha Courses
2. Bachelor of Siddha Medicine & Sciences –
3. BSMS
4. MD - Siddha Medicine

**Eligibility**

10+2 with Physics, Chemistry and Biology/Botany

**Institutions/Universities**

1. The Tamil Nadu Dr. M.G.R. Medical University, Channai
2. Government Siddha Medical College, Arumbakkam, Chennai
3. Government Siddha Medical College, Tirunelveli, Tamilnadu
4. Sri Sai Ram Siddha Medical College, Sriperumputhur, Tamil Nadu
5. Kerala University of Health Sciences, Thrissur, Kerala

**172.A Naturopathy**

**Introduction**

Naturopathy is a science of healing through nature and relies upon the study and balancing the five basic elements of nature known as Water, Air, Earth, Fire and Aether.

Yoga is combined with Naturopathy to add value to both these systems. Courses are available in both Naturopathy as well as in combination of both Naturopathy & Yoga.

**Courses**

1. Foundation Course in Yoga Science for Wellness (FCYScW)
2. Diploma in Yoga Science (D.Y.Sc.) for Graduates
3. B.Sc. (Yoga Science) (for 10+2 Science stream students) in the Biology.
4. Bachelor of Naturopathy & Yogic Sciences (BNYS)
5. M.D.Yoga & Naturopathy

**Eligibility**

* Entry level - 10th
* 10 + 2 or equivalent with Science stream

**Institutes/Universities**

1. Morarji Desai National Institute of Yoga, New Delhi
2. Banaras Hindu University, Varanasi
3. Dr. NTR University of Health Sciences Vijayawada Andhra Pradesh
4. National Institute of Naturopathy, Pune
5. Govt. Yoga And Naturopathy Medical College, Chennai
6. The Tamil Nadu Dr. M.G.R. Medical University, Channai
   1. **BDS (48)**
   2. **Pharmacy (51)**

**Introduction**

Pharmacy is the study of drugs which includes instructions on use, selection, composition, effects and side effects of drugs. It also includes development of new drugs, ascertaining of quality standards, dispensing of drugs and improvement of existing drugs.

**Eligibility**

10+2 with science

**Courses**

1. Diploma in Pharmacy
2. Bachelor’s in Pharmacy
3. Master’s in Pharmacy
4. Eligibility: B. Pharma
5. M. Tech (Pharm.)
6. MBA (Pharm.)
7. MS (Pharm.)
8. Ph. D. in Pharmacy

**Institutes/Universities**

1. National Institute of Pharmaceutical Education and Research, Mohali
2. [Jamia Hamdard, New Delhi](https://www.careers360.com/university/jamia-hamdard-new-delhi)
3. Annamalai University, Chennai
4. [Department of Pharmaceutics, IIT BHU, Varanasi](https://www.careers360.com/colleges/department-of-pharmaceutics-iit-bhu-varanasi)
5. [Maharshi Dayanand University, Rohtak](https://www.careers360.com/university/maharshi-dayanand-university-rohtak)
6. [Andhra University, Vishakhapatnam](https://www.careers360.com/university/andhra-university-visakhapatnam)
7. [National institute of Pharmaceutical Education and](https://www.careers360.com/university/national-lnstitute-of-pharmaceutical-education-and-research-hyderabad) [Research, Hyderabad](https://www.careers360.com/university/national-lnstitute-of-pharmaceutical-education-and-research-hyderabad)
8. [Delhi Institute of Pharmaceutical Sciences and](https://www.careers360.com/university/delhi-institute-of-pharmaceutical-sciences-and-research-new-delhi) [Research, New Delhi](https://www.careers360.com/university/delhi-institute-of-pharmaceutical-sciences-and-research-new-delhi)

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**Professional/Vocational Courses**

**(Common for all streams)**

* 1. **Advertising, communications & events (68)**
  2. **Administration.**
  3. **Air-hostess (for girls).**
  4. **Animation (79)**
  5. **Art Direction (72)**
  6. **B.A. in Script Writing**
  7. **Banking Management (86)**
  8. **Bachelor in Journalism (B.J--3 years)**

**Introduction**

It is an undergraduate Mass Communication course. Journalism is concerned with collection and dissemination of news through the print media and electronic media. The candidate is required highly developed skills in language, a good knowledge about media, an interest in current affairs and a broad general knowledge. Students can incorporate specialization in the areas of television, journalism, health reporting, IT reporting, business and finance reporting, crime reporting, sports reporting or foreign correspondent.

**Eligibility**

10+2 in any stream

**Course**

BA Journalism

**Institutions/colleges/universities**

Makhanlal Chaturvedi National University of Journalism, Bhopal

* 1. **Bachelor of Business Administration (BBA) (87)**

**Introduction**

* One of the most popular bachelor degree program after class 12th. BBA course is the gateway to numerous job opportunities in a number of sectors like marketing, education, finance. Sales and government to name a few.
* The course offers knowledge and training in management and leadership skills, to prepare them for managerial roles and entrepreneurship. During the tenure of the course, candidates learn various aspects of business administration and management through classroom lectures and practical projects internship.
* BBA can be pursued in full time as well as correspondence mode. There are various specializations one can choose from like Human Resource Management, Finance, Sales and Marketing and Information Technology.

**Eligibility**

10+2 in any stream

**Entrance exam**

Generally admission is granted on the basis of an entrance test conducted by the Institute/college. Few institutes conduct group Discussion and personal interview rounds followed by entrance test. Final admission is granted to candidates on the basis of scores obtained in the qualifying examination test, and GD-PI. Some of the popular BBA entrance examinations are listed as under;

NPTA, IMPT, FEAT, UGAT, AUMAT, BHU UET

**BBA Specialization**

Some of the most popular BBA specializations are listed below

* BBA Finance
* BBA Human Resource
* BBA Foreign Trade
* BBA in Banking and Insurance
* BBA Marketing
* BBA Hospitality and Hotel Management
* BBA Information Technology
* BBA Communication and Media Management
* BBA Hospital and Healthcare Management

**Jobs after BBA**

* Human Resource Executive
* Marketing Executive
* Marketing Manager
* Sales Executive
* Research &Development (R&D) Executive
  1. **BBA. Actuarial Sciences (85)**
  2. **BBA in Banking and Insurance**
  3. **BBA Communication and Media Management**
  4. **BBA Event Management**
  5. **BBA Finance**
  6. **BBA Foreign Trade**
  7. **BBA Hospital and Healthcare Management**
  8. **BBA Hospitality and Hotel Management**
  9. **BBA Human Resource**
  10. **BBA Information Technology**
  11. **BBA Marketing**
  12. **BBA Media and Communication**
  13. **BA (Hons) Mass Media in Hindi**
  14. **BBA Media Management**

**Other Options Common for all**

* 1. **Bachelor of Business Management (88)**
  2. **Bachelor of design (accessory)**
  3. **Bachelor of design (leather)**
  4. **Bachelor of interior designing**
  5. **Bachelor of Management Studies (BMS)**

**Introduction**

Bachelor of Management Studies (BMS) is an undergraduate program for management Studies offered by many universities throughout the world. The course allows you to obtain the knowledge and skills needed to assume management positions in a wide range of organizations.

* It helps students specialize in **management** and provide exposure to **subjects**  like business, finance, economics, and marketing.
* The major areas include labour **management,** negotiations, conflict resolutions, compensation systems, organizational behavior and statistics
* BBA and BMS are one and the same degrees with different names depending upon the college that offers the course
* B.Com. is for those students who are interested in accounting and those who would like to have a wider choice of subjects for higher studies viz; Economics, MBA related degrees as their higher studies option.
* BBA/BMS for those who want to pursue MBA later as this will help tremendously in MBA.

**Eligibility**

10+2 all streams

**Institutions/Colleges**

* IIT Chennai
* Faculty of Management Studies, Delhi
* S.P. Jain Institute of Management, Mumbai
* Institute of Management, Christ university, Bangalore

**Salary**

Rs.3—8 LPA

* 1. **Bachelor of Mass Media (BMM)**
  2. **Bachelor of Product Design**
  3. **Bachelor of Textile Design**
  4. **Bachelor of Interior Designing**
  5. **Bachelor of Mass Communication (BMC)**

**Introduction**

Mass communication is the process of disseminating information through a medium to a large and diverse audience. BMC course is a form of public communication, where the message or information is transmitted electronically or mechanically. Mass communication is made up of branches like PR, Journalism, advertising and mass media. Now a days Journalism and mass Communication is a very well known course combination.

**Eligibility**

10+2 in any stream with a minimum of 50% marks.

**Admission Procedure**

Admission procedure has two rounds

**First round**

Students will have to appear for the entrance test conducted by various institutes. This exam is a common objective and written test which is held in several cities across India. students will be short listed for second round on the basis of their entrance test score.

**Second Round**

If they successes in getting short listed, they will have to be present at the centre for the duration of 3-4 hours for the same. In this round they will have to a written ability test, they have certain documents verified and participate in a studio test as well as a personal interaction

**Institutions/colleges**

* JMI and other Institutes in India
  1. **Bachelor of Mass Media (BMM)**

**Introduction**

It is a 3-year is an undergraduate Mass Communication course dealing with communication medium used by the masses. It includes newspapers, magazines, cinema films, radio, television, etc. the duration of the course is generally 3 years. In the third year, students need to choose an area of specialization like Journalism, Advertizing etc. these may vary from institute to institute. On job training is also provided through an internship in 2nd year of this course. Apart from these, seminars, group discussions and field visits are frequently undertaken for 3 years.

**Eligibility**

10+2 in any stream, percentage requirement may vary from institution to institution.

Some institutes also conduct entrance examination.

**Courses**

Bachelor of Mass Media

**Institutions/Colleges/Universities**

**Employment areas**

* All India Radio
* Central Information Service
* News papers
* Periodicals and magazines
* Press Information Bureau
* TV Channels
* Websites etc.

**Job types**

* Columnist
* Correspondent
* Editor
* Freelance writer
* Journalist
* News Analyst
* Photo Journalist
* Reporter etc.

* 1. **Call Centre- training.**
  2. **Communication Design (81)**
  3. **Communication & events**
  4. **Communication and Media-studies**
  5. **Corporate Intelligence (101)**
  6. **Curator (57)**
  7. **Design (82)**
  8. **Diploma in Digital Management.**
  9. **Diploma in Elementary Education**
  10. **Drama Production (75)**
  11. **Drawing and Painting**

**Introduction**

BA in **Drawing and Painting** is an undergraduate course. Part of drawing and painting is the addition of texture, whether the piece is realistic or abstract. There are various kinds of textures in art and design. Actual and real textures are those that can be touched such as the smooth surface of a metal sculpture or the spiky surface of a cactus. We can readily identify a material by its texture.

**Eligibility**

10+2 in any stream

**Courses**

Graduation course: 3 years

**Colleges**

* College of Arts, Delhi
* JMI
* AMU, Aligarh
  1. **English literature.**
  2. **Event Management (92)**
  3. **Finance**
  4. **Financial Market Management**
  5. **Film Choreography (73)**
  6. **Film Cinematography (80)**
  7. **Film Direction (74)**
  8. **Film-making.**
  9. **Finance and Financial Management**
  10. **Financial Market Management**
  11. **Fine Arts**
  12. **Fire Safety Management (100% Job oriented Program--9871549659)**
  13. **Furniture and interior design course**
  14. **Flight/ aviation/ Pilot.**
  15. **Food science and Nutrition (103)**
  16. **Foreign language. (104)**

**Introduction**

* Foreign languages give a competitive edge in career choice
* One is able to communicate in the second language.
* Foreign language study enhances listening skills and memory.
* Improves the knowledge of one’s own language,

**Eligibility**

* 10+2 plus one year bridge programme and then must pass the assessment test in the respective languages.
* Students who have completed two years study are eligible for UG.
* An eligibility criterion is to be followed for admission in UG courses for different languages.

**Courses (languages)**

* German
* French
* Arabic

**Institutions/Colleges/Universities**

* 1. **Graphic Designing (83)**
  2. **Hair and Beauty-training Academies.**
  3. **Healthcare & Gym (UG & PG)**
  4. **Hospital Management (93)**
  5. **Human Resource Development**

**Introduction**

* Human resource Development (HRD) can be defined as a set of systematic and Planned activities designed by an organization to provide its members with opportunities to learn necessary skills to meet current and future job requirements.
* Learning is the fundamental principle that drives organizations towards higher concentration on Human Resource Development.
* HRD activities should begin when an employee joins an organization and continue throughout his career, irrespective of the authority level that the person holds.
* Companies require their human resource management professionals to possess a bachelor’s degree or even a Master’s degree particularly for senior-level leaders like HR directors and labor Relations Managers.
* It is very rare to find an entry-level job in the HR field without at least a bachelor’s degree.

**Eligibility**

* 10+2 in any stream

**Courses**

Bachelor’s degree in human resources or human resource management may be designed as;

* Bachelor of Science (BS)
* Bachelor of Arts (BA)
* Bachelor of Business Administration (BBA)
* BS/BA degree programs are most often designed as
* BA/BS in Human Resource Management
* BS/BA in Management with a concentration in Human resources.

Because of the business focus of most human resources degree programs, Bachelor’s degrees are often designed as;

* BBA wit concentration inhuman Resources.
* BBsA with a concentration in Organizational Behavior.
* BBA with concentration in Industrial Relations.
* BBA with a concentration in Management and Leadership.

Bachelor’s degree programs are designed to prepare students for entry-level positions in any number of HR areas, such as;

* Employment and Recruitment ‘
* Training and Development.
* Compensations and benefits.
* Employee and Community Relations.
* Personnel records.
* Health and safety strategic planning.

**Institutions/Colleges**

(IMI, IGNOU)

**Master’s Degree programs in Human Resources**

Organizations are now seeking highly skilled HR professionals who can take an active role in building the strategic vision of an organization. Therefore Master’s degrees in human Resources are more popular than ever.

* 1. **Insurance. (opportunities in this sector) (96)**
  2. **Interior Designing (106)**
  3. **Investment and Mutual Fund**
  4. **Jewellry Design Course**

**What is a Jewellry Design?**

Jewellery design is a field wherein professionals design as well as create jewellery. The entire process of making a jewellery is quite complex and requires technical expertise. Before any jewellery piece is created, a design for it is conceptualized through a detailed drawing which is made by a jewellery designer.

A jewellary designer is a person who is trained in such a way that he/she has an architectural as well as well as functional knowledge of different materials, compositions, fabrication techniques, wearable as well as the market tends.

**Eligibility**

10+2 in any stream for admission at UG level

For admission at PG level graduate is the requirement , if the candidate has the required skills.

**Courses**

**UG Courses:** BDes in jewellery design, B.Sc. in jewellery design, BA in jewellery design and BVoc in jewellery design

**PG Courses:** MD. In jewellery design, M.Sc. in jewellery design, MBA in jewellery design.

**Diploma courses** are also available.

**Required skills**

* Good communication skills
* Visual imagination
* Eye for detail
* Adequate knowledge of past and present market trends
* Creativity
* Innovativeness
* Intra personal skills
* Knowledge of different metals and gems

**JEWELLERY DESIGN UG COURSES**

**BDes Jewellery design**

**Syllabus**

* Elements of design
* Design foundation for jewellery
* Gemology
* Setting of gem stones In jewellery
* Computer aided design (CAD)
* Design with different techniques and ideas
* Merchandising
* Branding
* Digital representation
* Marketing and advertising
* Materials for design
* Accessory design
* International market
* History of arts and jewellery
* Diamond grading
* Export procedure
* Manufacturing costume jewellery
* Rendering techniques
* Metallurgy and casting process (design theory)
* Design theories and practices
* Product business planning
* Advanced CAD
* Methods and instruments for design
* Indian market
* Manufacturing process

**BA Jewellery Design**

* Introduction to jewellery design
* Design concepts
* Cultural studies
* Material exploration
* Communication skills
* Design studio (experience/skill based design collection)
* Design studio (logic and data based system design project)
* Design studio (institution based design collection)
* Design studio (handcrafted high fashion exquisite jewellery design collection)
* Professional, visual and presentation methods
* Gemology
* Body and adornment (economics, anthropometry)
* International language
* Jewellery rendering and presentation methods

**B.Com. Jewellery**

* Fundamentals of jewellery design and gemology
* Drawing and rendering (matals and Gemstones)
* Theme based designing
* History of jewellery
* Cost based designing
* Historical designing
* Orthographic views
* Indiann and international jewellery market
* Diamond grading and sorting
* Manufacturing process
* Accessory design
* Marketing, advertisement and brand building
* Advanced computer aided designing

**B. Sc. Jewellery**

* Jewellery designing
* Introduction to jewellery design
* History of jewellery
* Design and colour theory
* Metal and stone rendering technique
* 3D methodologies
* Researching and developing them-based designs
* Jewellery products and classification
* Designing for luxury and retail jewellery segments
* Designing for domestic and international market
* Research based project
* Portfolio development

**Gemology**

* Basic quality of a gem
* Method employed in gem mining
* Physical and optical properties of gems
* Gem-cutting techniques
* Crystallography and applications in gemology
* Instruments in gem identification
* Limitations and precautions
* Synthetics, composites, imitation gemstones
* Systematic identification of gemstone groups
* Individual stones and their stimulants

**Diamond grading**

* Introduction to uniqueness of diamond and journey from mines to cutter
* Cutting and polishing process
* Study of round brilliant cut
* Basics of polished ddiamonds
* Grading using international standards
* History of cuts
* 4 Cs: Grading for colours, clarity, cut and carat
* Identification of diamond and dimond stimulants

**Jewellery manufacturing**

* Properties of metals
* Alloys
* Manufacturing terminology
* Utility and limitations of important tools
* Cutting and blending pattern and texture
* Fusing and soldering
* Cold joining
* Finishing, patinas, stone setting, mechanism and chains
* Casting technology
* Hollow form
* Platinum jewellery

**BBA Jewellery Design and Management**

* Principles of management
* Communication skills
* Jewellery and gem business in India
* Computer Applications
* Quantitative techniques
* Accounting practice
* Organizational behaviour
* Business Economics
* Instrumentation study
* Business taxation
* Management accounting
* Ornament designing
* Gemology
* Marketing management
* Human resource management
* Production management
* Salesmanship and retailing
* Financial management
* Management information system
* Legal aspect of business
* E-commerce
* International trade
* Entrepreneurship development
* Advanced jewellery workshop

**Diploma Programme in Jewellery design and Technology**

* Drawing skills, free hand , human form, perspective and objective drawing
* Environmental exposure
* Colour science
* Introduction to Geometry
* Form and Space
* Introduction to gold smithing and metallurgy
* Introduction to gemology
* Design project
* Introduction to presentation and documentation
* Basic gold smithing and jewellery making skills such as filing, wire drawing and sheet rolling
* Students will learn how to use all hand tools and workshop machinery
* Practical training on individual and well equipped workbenches
* Lectures on safety regulations
* Technical exercise will be followed by design exercise in jewellery making
* Presentation techniques
* Design methodology
* Wax modeling
* Introduction into casting technology and the complete casting production cycle
* Polishing and finishing techniques
* Stone-setting
* Design and manufacturing exercise on jewellery fittings
* Etching and epoxy
* Engraving and enameling
* Repousse
* Stamping, coining and hallmarking
* Electroplating
* Quality control
* Maintenance of equipment and tools
* Safety, health and environment
* Export documentation and money realization
* Gemology—study and identification of diamonds and other coloured gemstones
* Research—domestic and international markets
* Photograph offers—costing, price analysis, and inputs in marketing and promotion
* Widow display and packaging
* Introduction to photography
* Design collection
* CAD Jewellery design

**Comprehensive Jewellery Designing**

* Visualization and representation technique and freehand object design
* Geometry of design
* Philosophy of colour
* Visual studies: Exploration of forms and textures
* Introduction of metallurgy covering all precious metals
* Design methodology
* Design process and prototyping in paper
* Presentation on traditional Indian jewellery
* Visit to the crafts and National Museum
* Knowledge of Gems
* Presentation technique I: Basic 3D drawing , stone rendering, metal rendering using different media
* Presentation technique II: basic technical drawing including isometry, orthography and perspective drawing
* Presentation technique III: Advanced rendering of faceted and phenomena stones
* Presentation technique IV: advanced technical drawing
* Market research: understanding different jewellery markets
* Design project based on market research
* Window display and packing
* 3 day visit to jaipur
* Computer Aided Jewellery designing (CAD)

**Basic jewellery Designing**

* Visualization and representation technique and freehand object design
* Geometry of design
* Philosophy of colour
* Visual studies: Exploration of forms and textures
* Introduction of metallurgy covering all precious metals
* Design methodology
* Design process and prototyping in paper
* Presentation on traditional Indian jewellery
* Visit to the crafts and National Museum
* Knowledge of Gems
* Presentation technique I: Basic 3D drawing , stone rendering, metal rendering using different media
* Presentation technique II: basic technical drawing including isometry, orthography and perspective drawing
* Lectures and demonstration of Basic jewellery making technique.

**Jewellery Design: Finishing, polishing and electroplating**

* Introduction to tools and equipment
* Magnetic polishing
* Finishing process including use of files, pendant motors, burns, rubber wheels, and emery papers
* Polishing processes including cutting and buffing using different brushes, felt laps, cotton buffs, grinding wheels etc.
* Textures and finishes
* Ultrasonic cleaning and steam cleaning
* Handling polished components
* Introduction to electroplating equipment and chemicals
* Different kinds of plating and galvanic solutions
* Practical exercises in silver and gold plating
* Introduction to part plating techniques and pen platters 5. Part plating techniques and use of pen platters
* Safety, storage and quality check

**Jewellery Design: Engraving and Enameling**

* Cutting process
* Gripping, posture, magnification
* Techniques of marking, decorative engraving, textures and carving to create a surface for enameling
* Basic metal work
* Types of enamels, opaque and transparent
* Preparation and application of enamels
* Enameling kilns and equipments
* Cloisonné and champlevé techniques
* Developing design in colour using basic techniques
* Developing design in colour using basic techniques
* Texture and special effects
* Firing and finishing

**Jewellery Design: Stone setting**

* Introduction to stone setting tools including usage and making of gravers
* Gripping, posture and magnification
* Claw, bezel and channel setting—theory and practical
* Pave, flush and tension setting—theory and demonstration
* Introduction to new setting techniques such as pressure and invisible setting
* Introduction to setting of fancy shape stones
* Finishing of different types settings using burs, files, rubber wheels and emery papers
* Quality check.

**Gemology course**

**Diamonds**

* Historical background, origin, geological timetable, mining, occurrence and major deposits of the world
* Crystallography, physical, chemical, optical properties. Distinctive features, inclusions and characteristics
* Treatment of Diamonds and their method of detection/identification
* Flow of rough diamond from mines to sites, diamond trade
* Nomenclature and grading system
* Importance of 4 Cs (cut, colour, clarity and carat)
* Types and forms of cuts
* Instruments for weight estimation

**Coloured Gemstones**

* Historical background, nomenclature rolex replica sale of gemstone, origin, geological timetable, mining, occurrence. Major gemstones deposit of the world
* Famous gemstones, folklore, influence, healing properties, birthstones and astrological view
* Nature of gem materials, crystal systems, crystallography, physical, chemical and optical properties. Inclusions, characteristics and sources of omega replica sale, best known Gemstones to trade
* Use of gemmolite and other Gemological instruments in identification
* Identification techniques
* Types and forms of cuts
* Enhancement-treatments and methods of detection/identification
* Synthetic stones- important properties and identification methods
* Organic gemstones and their physical, chemical, and optical properties, source and identification techniques
* Instruments for weight estimation.

**Diamond Grading Course**

* Diamond: historical background
* Origin, historical timetable, mining, occurrence, major diamond deposits of the hublot replica sale world, famous diamonds
* Crystallography, physical, chemical, optical properties, distinctive features, inclusions and characteristics
* Nomenclature and grading system
* Importance of 4 cs (cut, colour, clarity, and carat)
* Cut: Round brilliant and its facets, development of the brilliant cut, forms of diamond cut, types of brilliant cut, modified brilliant and fancy cuts, symmetry features, proportion, comprehensive evaluation

**Colour**

* Colour grades, origin and nomenclature, colour grading systems, colour measuring instruments

**Clarity**

* Clarity grades, origin and nomenclature, clarity grading systems, external and internal features

**Carat**

* Weight estimation of hublot replica sale, different cuts such as eight cut, carre, ful cut, navettes, drop shape along with instruments for weight estimation of round brilliant.
* Plotting and grading of cut and polished diamond by colour, clarity-external and internal features, cut symmetry features, calculation of proportions fake rolex sale and cut evaluation
* Diamond and its stimulants including synthetic moissanite and synthetic cubic Zirconia rado replica along with their identification techniques
* Diamond synthesis, treatment of diamonds and the method of detaction/identification

**Gemstone identification Course**

**Jewellery Design, quality control course**

**Jewellery Photography Course**

**Career in the Industry**

1. Starting salary as a jewellery designer is about 70-80 thousand repees per month
2. After having some years of experience, you can be the part of management of any jewellery design company.
3. Starting your own company.
4. Can work with smaller private player or a big brand as an employee. Can work as a repair person or lapidary. It all depends upon your experience and skill
5. You can join the vendor in order to grow your career. It is not difficult to findvendors associated with jewellery industry
6. You can leave the industry and run your mass production or a small unit.
7. You should realize what your future plans are in this industry. Freelancing, own company or something better.

**Institutes/ colleges**

* Allen School of Arts and Design, Jaipur
* Indian Institute of Gem and Jewellery, 19-22, Jhadewalan flatted factories, Delh

1. Courses across 3 streams (<http://www.iigjdelhi.org>)

(a reputed institute)

* Indian Institute of Gem and Jewellery, Jaipur
* Gemological & Jewellery Institute (GJI) (www.gjionline.com)

L-75, LGF, Shiv Mandir Marg, Lajpat Nagar-2

* PG Diploma in managing diamond -jewelry business

Duration—1 year (GD Goenka University)

* 1. **Liberal Studies (107)**
  2. **Library Science (108)**
  3. **Logistics and Supply-chain Management (97)**
  4. **Management (98)**
  5. **Mass-communication.**
  6. **Marketing, international marketing**
  7. **Media, advertising.**
  8. **Media & Communication Studies**

**Media & Event Management Courses**

* 1. **Bachelor of Multimedia Communication**
  2. **BA Media Technologies**
  3. **B.Sc. Visual Media**
  4. **Multimedia and Web technology**

**Introduction**

CBSE has introduced vocational subjects on multimedia and technology to enhance the students’ knowledge in latest technologies and trends lik, HTML, DHTML, XML, CSS, JAVA script. VB script, ASP, Photoshop, Coral draw etc. it not only increases the IT awareness but also gives the job opportunities in this field.

This course will definitely help those students who will select computer stream during their graduation after passing 10+2

Web designing courses have been gaining popularity as data visibility on the internet has become an important aspect of digitization.

There is a huge demand for designers in the market and pursuing web designing course can enhance the job prospects of candidates.

Multimedia technology includes interactive computer-based applications that allow people to communicate ideas and information with digital and print lements. Professionals in this field use computer software to develop and manage online graphics and contents.

The work that media technology specialists produce is used in various mrdia, such as training program, web pages and news sites.

**Five multimedia elements;**

(1). Text (2)image (3) Audio (4) Video (5) Animation

**Eligibility :** 10+2

**Courses**

* B.Sc. in multimedia—Degree course-3 year
* Diploma in web designing—2 year diploma
* Diploma in web designing and software development—2 year diploma
* Certificate in internet and web designing—18 month to 2 year certificate course
* Post-graduate diploma in web designing
* M.Sc. In E-commerce and web designing

**Institutions/colleges/universities**

(2) Indian School of Business and finance, New Delhi (2) Jagran Lakecity University, Bhopal,

* 1. **NGO management.**
  2. **NTTE**
  3. **Performing Arts (77)**
  4. **Philosophy**
  5. **Physical Education (BA & B.Sc.) (111)**

**Introduction**

Physical Education is study of bodily development, strength, physical co-ordination and agility. It is an undergraduate program. The 3-4 year duration B.P.Ed. course for 10+2 students and 1-2 year for graduates. Subjects included in the curriculum are

* Physical fitness, health related physical fitness.
* Performance related physical fitness.
* Health studies and effect of exercise
* Skeletal and muscular study.
* Analysis of circulatory, respiratory and endocrine systems
* Nutrition and health. Health promotion
* Safety education
* First aid and emergency care.
* Hypo-kinetic diseases, sports and life skills, etc.
* Ideal candidates for the course would possess competent motor skills, and movement patterns needed to perform a variety of physical activities.

**Eligibility**

* 10+2 in any stream
* Minimum aggregate of 50%
* Institutes conduct entrance test for admission.

**Courses**

D.P.Ed., B.P.Ed., M.P.Ed.

**Institutions/Colleges/Universities**

* Jadavpur University, Kolkata
* National Post Graduate College, Lucknow
* Scottish Church College, Kolkata
* Mount Carmel College, Bangalore,
* University of Lucknow, Lucknow.
* Chaudhry Charansingh University, Meerut
* And many more Institutions in different Cities.
  1. **Photography (84)**
  2. **Placement Training Program**
  3. **Printing and Packaging.**
  4. **Bachelor in Journalism (B.J)\_\_3 years**
  5. **Bachelor in journalism and Mass Communication—3years**
  6. **B.A. with Mass Media—3 years**
  7. **B.A. in Script Writing**
  8. **Private sector and Industry.**
  9. **Real Estate Training**
  10. **Religion**

**Introduction**

**Islamic studies:** It refers to the study of Islam. It can be seen under two perspectives.

1. Secular perspective

From a secular perspective, it is a field of academic research, whose subject is Islam as religion and civilization

1. Traditional Islamic perspective

From this perspective Islamic studies is an umbrella term of religious sciences ***(Ulum al Din)*** persuaded by Ulamas.

**Eligibility**

10+2 in any stream

**Courses**

BA in Islamic Studies

**Institutions/Colleges/Universities**

* Chistiya College of Arts and Science. Aurangabad
* Maulana Azad national Urdu University, Hyderabad
* Jamia Hamdard, Delhi
* Preston International College, Chenni.
  1. **Students’ Welfare (JMI) (Graduation & Post graduation)**
  2. **Transportation and Mining-studies**
  3. **Private sector and Industry.**
  4. **Public Relations (71)**
  5. **Real Estate.**
  6. **Retailing,**
  7. **Social Worker**
  8. **Sports & Sports Management (112)**

**Introduction**

Bachelor of Sports Management (BSM) syllabus consists of topics such as Basic Statistics, contemporary issues in Sports, Ethics of Sports, Financial Accounting, Principles of leadership in Sports, Marketing Management, Advertising, Public relations and sponsorship of sports and much more.

**Eligibility**

10+2 in any stream with at least 50% marks.

**Courses**

Bachelor of sports management (BSM)

MBA in sports management

**Institutions/colleges/universities**

* MIT School of Management, Pune
* ICFAI Business School, Hyderabad
* Symbiosis International University
* Amity School of Physical Education

**Top Jobs**

* Athletic Coach
* Athletic director
* Event Co-coordinator
* Facilities manager
* And many more
  1. **Students’ welfare (Graduation and Post-graduation) Jamia Millia Islamia.**
  2. **Technical Education.**
  3. **Theatre.**

**Introduction**

* Drama and theatre studies is an intellectually challenging and artistically rewarding subject
* The course is designed to instill a thorough understanding of both theory and practice and has plenty of scope for development-based skills.
* As the student of Drama and Theatre studies course, you will be expected to see as much live theatre as possible and to actively explore new ideas and forms of performance.

**Eligibility**

10+2 in any stream.

**Courses**

BA, MA in theatre and TV

**Institutions/Colleges/Universities**

* National School of Drama, Bahawalpur House, Mandi house, New Delhi, DU.
* Lovely Professional University (admission office—connaught place)
* ICE Balaji Tele Films—Institute of Creative Excellence, Mumbai
* Asian Academy of Films and Television
  1. **Tourism Industry.**
  2. **Transportation and Mining-studies I.T.**
  3. **Vocal and Instrumental Music (78)**

**Hotel Management & Food Services**

* 1. **Bachelor in Hotel Management (NIMS, Jaipur)**
  2. **Bachelor of Hospitality Management**
  3. **B.E. Food Technology and bio-chemical Engineering**
  4. **B.E. Food Technology**
  5. **B.Sc. Food Science**
  6. **B.Sc. Food Science and quality control**
  7. **B.Sc. Food Technology**
  8. **B.Sc. Microbial and Food Technology**
  9. **B.Sc. Nutrition, Food Service Management and Dietetics**
  10. **B.Tech. Food Science**
  11. **B.Tech Food Technology**
  12. **Hotel management and food services**

**Institute of Hotel Management Catering & nutrition (IMH), Pusa, New Delhi**

**Affiliated to IGNOU.**

**Enterence Review:** The exam is called JEE, conducted by—NCHMCT

* Fee about 2.3 lakh
* Duration – 3-years.
* 100 other Management Institutes in Delhi (NCR)
* **Hotel Management (94)**

**Post graduation courses in Food Technology**

* 1. **M.A. Food Nutrition**
  2. **M.E. Food Technology**
  3. **M.E. Processing and Food Engineering**
  4. **M.Sc. Food Science and Technology**
  5. **M.Sc. Food technology**
  6. **M.Sc. Microbial and Food Technology**
  7. **M.Tech. Food and Nutrition**
  8. **M.Tech. Food Biotechnology**
  9. **M.Tech. Food Chain Management**
  10. **M.Tech. Food Engineering and Technology-integrated**
  11. **M.Tech. Food Engineering and Technology**
  12. **M.Tech. Food Processing Technology (integrated)**
  13. **M.Tech. Food safety and Standards.**
  14. **M.Tech. Food Technology**
  15. **MBA Course in Food technology**

**Research Courses in Food Technology**

* 1. **Ph.D. Food and Dairy Technology**
  2. **Ph.D. Food Biotechnology**
  3. **Ph.D. Food Engineering and Technology**
  4. **Ph.D. Food science and Technology**
  5. **Ph.D. Food Technology**
  6. **PG in Geo-informatics**
  7. **PG Diploma in Food Analysis and Quality Control**
  8. **Ph.D. in Hotel Management (NIMS, Jaipur)**

**Tourism and Travel**

* 1. **Indian Institute of Tourism Travel Management (IITTM): Gwalior**
  2. **Tourism and International Business**
  3. **Tourism and Leisure services: *NOIDA*.**
  4. **Tourism Industry**
  5. **Tourism & Travel (113)**

**PG Courses Humanities**

* 1. **Avenues of Study of History at PG**
  2. **Master of Computer Applications, MCA, (Delhi University);**
  3. **M.A. Animation,**
  4. **M.A. Business Economics,**
  5. **MA Communication**
  6. **M.A. Development Economics.**
  7. **M.A. Econometrics**
  8. **M.A. Mathematical Economics**
  9. **M.A. Media studies and Production**
  10. **M.A. Rural Economics,**
  11. **M.S. Quantitative Economics**

**PG Courses Commerce**

* 1. **Cost and Management Accountant (CMA)**

**Introduction**

Cost and management accounting is a form of accounting that aims to maximize profit by managing revenues and expenses. It provides data and reports used by managers to inform their strategies around long-term profit and growth.

It aims to improve company’s profitability by managing, controlling and eliminating expenses. Cost accounting helps business helps determine the cost of products, project and processes , which shows the company where its earnings and losing money and an integral part of budget planning. Cost and management accounting provides data and analyses reports that can be used by managers to make decisions that will lead to long-term profits and growth

**Eligibility, procedure**

It’s a post-graduate course.

The very first step to becoming a cost accountant in charge of budget management is to earn a formal degree in accounting from a program that is accredited by the *Association to Advance College Schools of Business.* While some smaller employers will hire those with an associate’s degree, a majoring would prefer to hire a professional who possesses a bachelor’s degree in the discipline.

After your bachelor’s degree, you will be eligible for most junior accountant roles where you can gain experience; you can pursue your certification and becomes a certified Management Accountant (CMO).

A CMA through the *Institute of Management Accountants* have proven that they have experience and have mastered to succeed in the industry.

**Job opportunities**

More and more service companies are concerned with analyzing costs and finding a way to reduce expenditures. If you are studying and want to benefit from the high demand for professionals in this role, you should consider specializing the importance of cost management in accounting; you can then be considered a skilled candidate.

* 1. **Certified Financial Planner – CFP**
  2. **Chartered Financial Analyst (91)**
  3. **Law graduate and post graduates (LLB & LLM)**
  4. **LLB**
  5. **Copy right law**
  6. **Corporate law**
  7. **Criminal law**
  8. **LLM**
  9. **M. Com**

**PG courses in Medical Science**

* 1. **M.Sc. Bio-technology.**
  2. **M.Sc. Computer Science (Delhi University);**
  3. **M.Sc. Geo-science,**
  4. **M.Sc. Green technology.**
  5. **M.Sc. Medical Anatomy**
  6. **M.Sc. Medical Biochemistry**
  7. **M.Sc. Medical Pharmacology**
  8. **M.Sc. Medical Physiology**
  9. **M.Sc. Medical Microbiology.**
  10. **MD Anesthesiology**
  11. **MD Biochemistry**
  12. **MD Community Medicine**
  13. **MD Anatomy**
  14. **MD Dermatology, venerology and Leprosy**
  15. **MD Forensic Science**
  16. **MD General Medicine**
  17. **MD Microbiology**
  18. **MD Pediatrics**
  19. **MD Pathology**
  20. **MD Pharmacology**
  21. **MD Psychiatry**
  22. **MD Physiology**
  23. **MD Radio-diagnosis**
  24. **MD Respiratory Medicine**
  25. **MD Radiology**
  26. **Master of Public Health**
  27. **Master of Social Works**
  28. **MS Obstetrics & Gynecology**
  29. **MS Ophthalmology**
  30. **MS Otto-Rhino-Laryngology**
  31. **MS Orthopedics**
  32. **MS General Surgery**
  33. **MS Medical-anatomy**
  34. **Ultra Sonography- 4D**

**(Institute of Public health & hygiene, 011-26782850)**

**Faculty of Physiotherapy**

* 1. **Master of cardiopulmonary**
  2. **Master of Neurology**
  3. **Master of Orthopedics**
  4. **Master of Sports**
  5. **Master of Community Rehabilitation**
  6. **Master of Gynecology & Obstratics**

**Faculty of Nursing**

* 1. **M.Sc. (Child-health--Pediatrics Nursing)**
  2. **M.Sc. (Obstetrics’ & Gynecology)**
  3. **M.Sc. (Psychiatric—Mental Health)**
  4. **M.Sc. (Medical—Surgical Nursing)**
  5. **M.Sc. (Community Health Nursing)**

**Health and Allied Sciences**

* 1. **Master of Optometry**
  2. **Master of Pharmacy**
  3. **M.Sc. Radio-imaging Technology**
  4. **M.Sc. Operation Theatre Technology**
  5. **M.Sc. Medical Lab technology**
  6. **M.Sc. Micro-biology**
  7. **M.Sc. Nutrition & Dietetics**
  8. **PG Diploma in MRI**
  9. **PG Diploma Ct Scan**

**M.Tech.**

* 1. **M.Tech. Nuclear Engineering**
  2. **M.Tech. Aerospace**
  3. **M.Tech. Oil and Gas, Energy & Power—2years, NIMS University, jaipur.**
  4. **M.Tech. Civil Engineering**
  5. **M.Tech. Computer Science & Engineering**
  6. **M.Tech. Electronics & communication Engineering**
  7. **M.Tech. Mechanical Engineering**
  8. **Master of Computer Application (MCA)**
  9. **Current research scope in science**

**Advanced Engineering**

* 1. **PhD. Computer Engineering**
  2. **PhD. Computer Science & Engineering**
  3. **PhD. Electronics & communication Engineering**
  4. **PhD. Management and Administration**
  5. **PhD. Mechanical Engineering Ph.D. in Dental Science**
  6. **Ph.D. sports**

**Advanced Medicines**

* 1. **Ph.D. Cardiology**
  2. **Ph.D. Nutrition & Dietetics**
  3. **Ph.D. Neurology**
  4. **Ph. D. Nursing**
  5. **Conservative dentistry**
  6. **Oral & Maxillofacial Surgery**
  7. **Oral Medicine & Radiology**
  8. **Oral Pathology and Microbiology**
  9. **Prosthodenties and crown and bridge,**
  10. **Periodontolology,**
  11. **Orthodontics and Danto Facial Orthopedics**
  12. **Public health and dentistry,**
  13. **Paedodentics and preventive dentistry,**

**Business Administration**

* 1. **MBA (and advance study)**
  2. **MBA Health Care Services**
  3. **MBA (Supply chain and logistics)**
  4. **MBA Hospital Administration**
  5. **MBA Economic Legislation**
  6. **MBA Event Management**
  7. **Management Studies**
  8. **Managerial Economics**
  9. **Quantitative Technique I & II**
  10. **Master ob Business Economics**
  11. **M.phil (Management/Administration)**

**Education**

* 1. **Teachers’ training (B. Ed; M. Ed; M.A. and research in Education)**
  2. **Diploma in Elementary Education (100)**
  3. **Education management.**
  4. **Sports and Sport education**

**(D.P. Ed, B.P.Ed, M.P.Ed, *Delhi, Lucknow* )**

* 1. **DIET**
  2. **Educational/vocational School Counselor**
  3. **Montessori Teaching (109)**
  4. **Technical Education**

**Integrated Courses**

* 1. **B. Pharma+ MBA (Dual Degree—NIMS University)**
  2. **BCA+MCA—5 years..**
  3. **B. Tech+ MBA ……….. 5 years**
  4. **B.Sc+ Agriculture + Food- business ……. 5 years**
  5. **BBA+MBA (Integrated)**

**Job Opportunities after UG & PG**

* 1. **Civil Services, IAS, IPS, IRS, IRS, etc--Conducted by (UPSC)**
  2. **Army**
  3. **Navy**
  4. **Air Force**
  5. **Coast Guard**
  6. **Detective (102)**
  7. **Flight Attendants (Cabin crew)**
  8. **Police.**
  9. **Pilot**
  10. **Current trends in the insurance Sector**
  11. **Stock brokers (Master of trade)**
  12. **Cluster Innovation Centre (CIC)** [**www.cic.du.ac.in**](http://www.cic.du.ac.in) **or** [**www.du.ac.in**](http://www.du.ac.in)
  13. **What is Dairy Management?**
  14. **Agri-Force**
  15. **Earth Scope**
  16. **Off-beat careers**
  17. **Cartoonist**
  18. **Calligrapher:**
  19. **System Analyst**
  20. **Food blogging**
  21. **Jewelry designer**
  22. **Fitness experts/personal trainer**
  23. **Travel planners.**
  24. **Skin-care specialist: A Cosmetology Education**
  25. **Athlete trainer**

**Jobs after BBA**

* 1. **Human Resource Executive**
  2. **Marketing Executive**
  3. **Marketing Manager**

**Entrance test, CAT, CMAT, XAT, GMAT, ATM or IITTM**

**Top 10 Business Schools/Institution in India**

1. IIT------------Amedabad
2. IIT-----------Kolkatta
3. IIT------------angalore
4. Xavier labour Relations Institute--------Jamshedpur
5. Indian Institute of management----------Lucknow
6. IIM-----Kozhikode
7. Management Development Institute------Gurgaon
8. Faculty of Management Studies-------University of Delhi, Delhi
9. Amity Business School, Noida
10. Pri. LN Welingkar Institute of Management Development and Research, Mumbai

Rank--12. Jumnalal Bajaj Institute of Management studies, Mumbai (Rank-12)

Rank--13. Indian Institute of Foreign Trade, Delhi (Rank-13)

Rank--18. International Management Institute, Delhi (Rank-18)

Rank--19. Institute of management Technology, Ghaziabad (19)

Rank--28. Institute of Management Studies, Ghaziabad (28)

Rank--32. Delhi School of Management, Delhi Technological University (32)

Rank--35. FORE School of Management, Delhi (35)

Rank--37. Department of Management Studies, IIT (37)

Rank--48. Lal Bahadur Shastri Institute of Management, Delhi (48)

Rank--49. Faculty of Management Studs, Manv Rchna Intitutional Univrsty, Faridabad

Rank--50. Jagan Institute of Management Studies (JIMS), Rohni, Delhi (50)

**B.Tech Colleges in Delhi**

* IIT Delhi
* Netaji Subhash institute of Technology, New Delhi.
* BE in Computer Engineering……………….. 1.41 lakh/annum
* BE in Information Technology ……………....do…..………... .
* BE in Electronics & communication Eng………...do………....
* BE in Bio-technology…………………………..….do…….......
* BE in Instrumentation and Control Eng…..do…………………
* BE in Manufacturing Process & Automation Eng….do…..…..
* BE in Mechanical Eng……………………………..do…...…..
* National Institute of Technology
* Ambedkar Institute of Advanced Communication Technologies & Research
* B. Tech in Computer Science
* B. Tech in Electronics & communication Eng
* B. Tech in Computer Science & Eng (lateral entry)
* B. tech in Electronics &Communication Eng (lateral entry)
* Bhagwan Parshuram Institute of Technology, New Delhi

(affiliated to Guru Gobind Singh Indraprastha University)

* B.Tech Computer Science &Engineering, 120 seats
* BT in Elec. & Commu. Eng. 120 seats
* BT in Elect. & Electronics Eng 60 seats
* BT in IT, 60 seats
* Northern India Engineering College, ND.

(affiliated to Guru Gobind Singh Indraprastha University)

* BT in Civil Engg, 120 seats, 44,000/annum
* BT in Mech & Auto Engg (2nd shift also) seats 180, Rs.44,000/annum
* BT in Com Science & Engg seats 120, Rs. 44,000/annum
* BT in Electronics & Communication Enngg. Seats 180, Rs.1.02/annum.
* BT in Ele & Electronics Engg seats 120, Rs44,000/annum
* BT in IT seats 120, Rs.44,000/annum
* BT in Electronics & Communication (2nd shift), seats 60, Rs. 44,000/annum
* Bt in Ele & Electronics (2nd shift) seats 60 Rs.44,000
* BT in Mech Engg, seats 60 , Rs 44,000/annum
* And many more
* Jamia Hamdard, ND
* BT in Food Tech seats 30, Rs. 37,000/annum
* BTin Comp SC & Engg Rs. 37,000/annum
* BT in Electronics & Communication
* Inderprastha Institute of Information & Technology, ND (11 courses)

(affiliated to Guru Gobind Singh Indraprastha University)

* BT in Comp Sc. & Engg seats 110, Rs.1.17,000/annum
* BT in Elecs & communication seats 80, Rs.1.17,000/annum
* 9 more.
* Ch. Brahmprakash Government Engg.College (6 courses of 4 years each are offered)
* BT in Civil (lateral entry also)
* BT in Environmental Engg.(lateral Entry also)
* BT in IT (lateral entry also)
* Delhi Institute of Tool Engg.(DITE)

(affiliated to Guru Gobind Singh Indraprastha University)—5 courses offered

* BT in Mechatronics. Rs. 60,000/annum
* BT in Tool Engg. Rs.60,000/annum
* And others
* JMI. Jamia Nagar
* Centre for Civil Aviation Training (CCAT), ND

(Approved by DGCA)

* BT in Aircraft Maintenance Engg Rs. 85,000/annum
* BT in Aeronautical Engg Rs.79,000/annum
* BT in Aircraft Maintenance Engg. Rs.85,000/annum

**Foreign destinations**

CAT

(Aspirants should make planned efforts to maximize their chances of success)

On line course for free

* [www.courser,org](http://www.courser,org)
* [www.udacity.com](http://www.udacity.com)
* [www.edx.org](http://www.edx.org)
* [www.ietsintern.com](http://www.ietsintern.com) (intern in the field of your choice)
* [www.hellointern.com](http://www.hellointern.com) (intern in the field of your choice)

Gap year

CMAT: The second most important after CAT

Exams required to study in US

SAT

TOEFL

GMAT

GRE

AP

Curricular Practical Training (CPT)

Optional Practical Training (OPT)

Curricular Practical Training (CPT)

Optional Practical Training (OPT)