



The UG degree course is divided in three sections of 5 years each. In first professional course the students are taught about the anatomy, physiology and history of Ayurvedic system. In second course they are taught about the toxicology and pharmacology and the third course contains the surgery, ENT, skin, obstetrics and gynaecology.

The entire course contains the modern anatomy, principles of medicines, physiology, sociology and preventive medicines, forensic medicine, principle of surgery, toxicology, ENT, botany and pharmacology. The graduates use the title "Vaidyar" before their name (abbreviation Vr.).

4. BUMS (Bachelor of Unani Medicine and Surgery)

It is reasonable to expect the doctor to recognize that science may not have all the answers to problems of health and healing."

- Norman Cousins

B.U.M.S is a five-year undergraduate degree program that deals with the medical knowledge and applications of the Unani system and surgery. Unani system of medicine is different from the regular medications (allopathy). As per Unani System, the body has the power to heal itself using the natural processes/natural power of the body. In this modern age where stress and anxieties are root cause of various diseases, Unani system is known for treating various deadly disease and disorder in a natural way. It is known for the treatment of weight loss, kidney stone, diabetes, psoriasis, arthritis and others.



This system of medicine has been in practice since 6,000 years and is mainly based on the four components that are: earth, fire, water, and air.

5. BDS (Bachelor of Dental Surgery)

Happiness is your dentist telling you it won't hurt and then having him catch his hand in the drill.
- Johnny Carson.

BDS (Bachelor of Dental Surgery) is the only professional programme on dental surgery in India. The course duration is 4 years followed by one year of paid rotating internship. BDS is one of the most sought-after course after MBBS. In India, BDS is regulated by the Dental Council of India where all dentists have to register in order to practice after the completion of their study.



The BDS degree is awarded on the successful completion of the four-year academic education. After completing your BDS, you are qualified to practice as a dentist.

6. Veterinary Science and Animal Husbandry

"Good veterinarians talk to animals. Great veterinarians hear them talk back"

B.V.Sc. & A.H. or Bachelor of Veterinary Science & Animal Husbandry is an undergraduate Veterinary Science professional course. The degree course is awarded after successfully completing a 4½ to 5-year program of study.



The Bachelor of Veterinary Science & Animal Husbandry (B.V.Sc. & A.H.) degree course covers subjects like Veterinary Anatomy & Histology, Veterinary Physiology, Veterinary Biochemistry, Veterinary Pharmacology & Toxicology, Veterinary Parasitology, etc. Veterinary Science and Animal Husbandry is the application of medical, diagnostic, and therapeutic principles

various types of animals. In other words, Bachelor of Veterinary Science & Animal Husbandry (B.V.Sc. & A.H.) is a course that deals with curing, treating as well as studying the various diseases occurring in animals and birds, in short studying the physiology of the animals in detail.

7. Physiotherapy

"Happiness is a state of mental, physical and spiritual well-being. Think pleasantly, engaged sport and read daily to enhance your well-being."

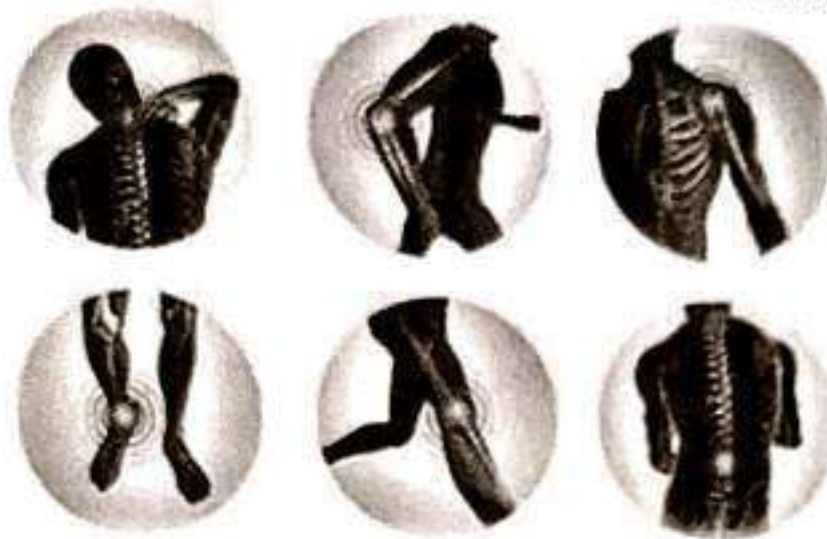
— Lailah Gifty Akita,

BPT or Bachelor of Physiotherapy is a 4-year undergraduate course, including compulsory 6 months of clinical internship, and involving the science of physical movement aimed at preventing disease and disability.

Physiotherapy is a branch of healthcare that applies modes of physical movement such as exercise and massage. The course provides education, advice, and counselling services for circumstances where movement and function are threatened by aging, pain, injury, diseases, disorders, conditions, or other environmental factors.

Students enrolled to the course are taught an advanced level about core physiotherapeutic skills such as manual therapy, therapeutic exercises, and application of electro-physiotherapy.

modalities, which have been proven to cure a range of disabilities and disease related to spine, back, neck, and even stress-related incontinence.



Entrance tests conducted for admission to the course are mentioned below-

- CET (Common Entrance Test)
- 'Guru Govind Indraprastha University Physiotherapy Entrance Exam
- JIPMER All India Entrance Exam.

OTHER COURSES IN THE FIELD OF MEDICAL SCIENCE:

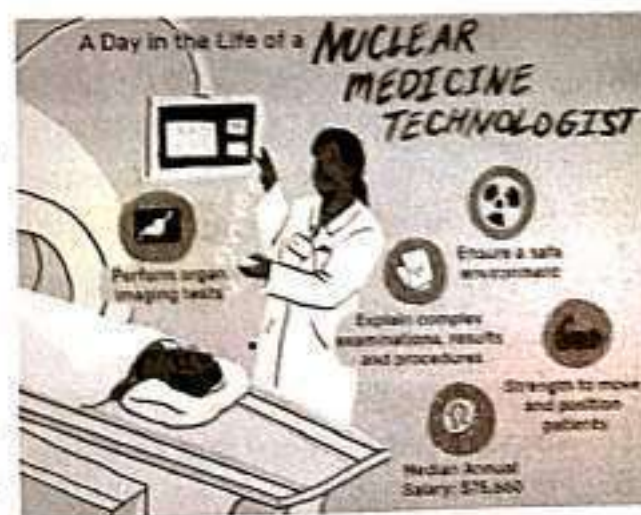
1. Nuclear Medicine Technology:

"The unleashed power of the atom has changed everything except our thinking. Thus, we are drifting toward catastrophe beyond conception. We shall require a substantially new manner of thinking if mankind is to survive."

— Albert Einstein

B.Sc. in Nuclear Medicine Technology is a 3-year full time course divided into 6 semesters, with each semester lasting a period of 6 months. The prime objective of the course is to create skilled professionals who, can demonstrate their requisite knowledge and skills in the field of Nuclear Medicine.

Nuclear Medicine involves dispensing and administering radioactive substances to a patient. The distribution of radioactivity within the patient's body is then imaged using a Gamma Camera in order to obtain information on the



structure and function of organs. A Nuclear Medicine Technologist forms part of a multidisciplinary team.

Institutes that provides courses in Nuclear Medicine Technology:

- Christian Medical College (CMC), Vellore
- Manipal University, Karnataka
- Vinayaka Missions University, Tamil Nadu
- Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry

2. Prosthesis & Orthotics

"They're not prosthetics. They're my bones. They come out when I'm inspired. They always been inside of me, but I have been waiting for the right time to reveal to the universe that I truly am."

- Lady Gaga

Bachelor in Prosthetic and Orthotics is a 4-year full-time undergraduate course with a 6-month compulsory training with three months in prosthetics and three months in orthotics.



The program imparts the students with a detailed study of rehabilitative treatment for neuromuscular and locomotor disorders. The course also aids students to build competence in the domain of physical well-being. Bachelor in Prosthetic and Orthotics course has been designed in accordance with the medical advancement taking place in the country.

Some of the specialized subjects present in the course include-

1. Biomechanics
2. Prosthetic Science
3. Orthotic Science
4. Mobility and Rehabilitation Aids
5. Amputation Surgery and Imaging Science
6. Pharmacology

7. Graphical Communication
8. Orthopaedics
9. Assistive Technology

Institutes that provides courses in Prosthesis & Orthotics

- All India Institute of Physical Medicine and Rehabilitation, Mumbai
- National Institute of Locomotor Disabilities, Kolkata
- Christian Medical College, Vellore
- Chakradhara Institute of Rehabilitation Sciences, Bhubaneswar
- ISHWAR Institute of Prosthetics and Orthotics, Chennai



3. Audiology & Speech Therapy

*"The art of conversation is the art of hearing as well as of being heard."
— William Hazlitt*

B.Sc. in Audiology and Speech Language Pathology is a 3-year, full-time undergraduate course divided into 6 semesters. Speech-Language Pathology finds relevance for its role in areas of speech, development of innovative language, swallowing and voice therapies.

Audiology and Speech Language Pathologists are responsible for the assessment and treatment of a broad range of speech, voice, language, swallowing and cognitive-communication impairments. Such impairments may result from structural or functional causes, and may have developed over time, or have resulted from causes such as stroke, head injury, or cancers of the head and neck.

Institutes that provides courses in Audiology & Speech Therapy are mentioned below

- Manipal University, Manipal
- Institute of Health Sciences, Bhubaneswar
- All India Institute of Speech and Hearing, Mysore
- Bharati Vidyapeeth University, Pune
- Amity University, Gurgaon.



Entrance tests conducted for admission to the course in India:

- IIT JAM
- GPAT
- JEST
- JNU CEEB
- AUCET.

4. Occupational Therapy

"What makes the desert beautiful,' said the little prince, is that somewhere it hides a well..."

- Antoine de Saint-Exupery

Bachelor of Science in Occupational Therapy or B.Sc. in Occupational Therapy is a 3-year undergraduate course divided into six semesters. The course is provided by various Colleges and Institutes throughout the country, where time duration can vary from 3 years to 4.5 years.

B.Sc. in Occupational Therapy deals with patients having physical, emotional, mental and neurological limitations. The course aims at improving life condition and rehabilitation of handicapped people through various modes of treatments such as- exercises, functional training, aiding devices and equipment, ergonomic training and environmental adaptation and restructuring.



Institutes that provides courses in Occupational Therapy:

- Manipal College of Allied Health Sciences, Manipal University
- Christian Medical College, Vellore
- All India Institute of Physical Medicine and Handicapped, Mumbai

5. Optometry

*"I shut my eyes and all the world drops dead; I lift my eyes and all is born again."
—Sylvia Plath*

B.Sc. Optometry is a full-time 3-year undergraduate course, divided into six semesters, of six months each. It essentially involves an advanced study of the clinical skills involved in professionally measuring eyesight, prescribing corrective lenses, and detecting eye diseases.

B.Sc. Optometry course has been designed to offer eligible candidates with a wide range of clinical skills and knowledge to examine, diagnose, treat and manage diseases and disorders of the visual system using lenses and other optical aids.

B.Sc. Optometry program aims to impart students about the various professional methods of visual screening, diagnosis of visual problems, orthotics and vision training, optometric counselling of patients with partial sight, colour blindness and hereditary vision defects, and designing and fitting of spectacles, contact lens, and low vision aids.

Institutes that provides courses in Optometry:



- Government Medical College, Kozhikode
- DY Patil University, Navi Mumbai
- Jamia Hamdard University, New Delhi
- Christian College, Bangalore
- Christian Medical College (CMC), Vellore

6. Respiratory Therapy Technology

*"If you woke up breathing, congratulations! You have another chance."
- Andrea Boydston*

Bachelor of Science in Respiratory Therapy or B.Sc. in Respiratory Therapy is a 4-year undergraduate course where candidates need to pass HS or 10+2 (Medical) equivalent as a minimum eligibility criterion for the course.

Respiratory Therapy is a relatively a new branch of Allied Health Sciences and a profession devoted to the scientific application of technology in order to assist in the diagnosis, treatment, management and care of patients with cardiopulmonary and associated diseases.

Respiratory therapists work with doctors and other healthcare professionals to evaluate,



treat and care for patients who have breathing and other cardiopulmonary disorders. They also perform diagnostic tests and limited physical examination. It teaches students to diagnose and treat cardiopulmonary problems and to help patients maintain their cardiopulmonary health.

Institutes that provides courses in Respiratory Therapy Technology

- Christian Medical College (CMC), Vellore
- Kasturba Medical College, Mangalore
- KK Natrajah Dental College & Hospital, Gandarvakottai
- Noida International University - [NIU], Greater Noida
- Manipal University, Karnataka



6. Nursing

"The very first requirement in a hospital is that it should do the sick no harm."

– Florence Nightingale

Bachelor of Science in Nursing or B.Sc Nursing is a 4-year undergraduate course where the admission is based on entrance exams held between April-June. B.Sc. The course is registered and controlled by the Indian Nursing Council.

Nursing course imparts students with some critical thinking skills, competence and standards required for the practice of professional nursing and midwifery. The course involves nursing of the wounded or ill. A lot of sectors require these graduates hence increasing its demand which is expected to increase in the future as well.

B.Sc nursing also comprises of Post-Basic course which is further divided into 2 categories, viz regular and Distance.

- B.Sc Nursing Post-Basic a regular course of 2-year duration and requires 10+2 education along with
- General Nursing and Midwifery (G.N.M.) is a distance course of 3-year duration and require 10+2 level of education along with G.N.M and 2 years of experience.



Institutes that provides courses in Nursing:

- Assam Downtown University
- Regional College of Nursing, Guwahati
- Guwahati Medical College Hospital
- Dispur Nursing Institute, Guwahati

7. Pharmacy

The marvellous pharmacy that was designed by nature and placed into our being by the universal architect produces most of the medicines we need.

— Norman Cousins

Bachelor of Pharmacy or B.Pharm is a 4-year undergraduate program which is compulsory for anyone who wants to practice as a pharmacist. Pharmacy is the study of preparing and conferring drugs and medicines for a number of illnesses and deficiencies.

The program imparts students how to become attentive professionals so as to ensure selection of a right drug for the right treatment for which all topics of pharmacology, chemistry, pharmaceutical chemistry, biochemistry, kinetics, pharmacy management, and compounding medications are covered. The scope of this course has increased positively. Pharmacists are needed in every location and every hospital.

Top Institutes that provides courses in Pharmacy:

- Jamia Hamdard
- Panjab University
- National Institute of Pharmaceutical Education and Research
- Institute of Chemical Technology
- Birla Institute of Technology & Science
- National Institute of Pharmaceutical Education and Research
- Manipal College of Pharmaceutical Sciences
- JSS College of Pharmacy



B. Radiography

Bachelor of Science (B.Sc. in Radiography) is a 3- yearlong course, divided into 6 semesters, with each semester lasting 6 months. Radiography is a medical sub field, dealing in the diagnosis of diseases and ailments related to the internal or hidden parts of the body, with the use of X-Rays.

The discipline includes the study of subjects and topics such as Clinical Radiotherapy, Radiobiology, Clinical Trials, Palliative care, Clinical Chemotherapy, etc. B.Sc. in Radiography includes the study of both Diagnostic and Therapeutic Radiography which involves treatment of cancers and tumours with the help of radiations.

Institutes that provides courses in Radiography



- Pt Bhagwat Dayal Sharma Post Graduate Institute of Medical Science, Rohtak
- -Maharaja Agrasen Medical College, Agroha
- Vinayaka Missions University, Salem
- Sapthagiri Institute of Medical Sciences and Research Centre, Bangalore
- Vinayaka Missions Sikkim University, Gangtok

9. Laboratory Technicians

A scientist in his laboratory is not a mere technician: he is also a child confronting natural phenomena that impress him as though they were fairy tales.

— Marie Curie

B.Sc. in Medical Laboratory Technology is a 3-year undergraduate course where candidates need to pass 10+2 level or equivalent with minimum of 55% marks as a minimum eligibility criterion for the course. B.Sc. in Medical Laboratory Technology is an undergraduate Medical Lab Technology program.

Medical Laboratory Technology program also known as Clinical laboratory science is an allied health profession that is focused on the treatment, diagnosis and prevention of disease through the use of clinical laboratory tests. During the program these tests help

candidates to learn and diagnose, detect and treat diseases. Additionally, the program includes with the collecting of information sampling, reporting, testing and documentation.

Institutes that provides courses in Laboratory Technicians

- Baba Farid College, Bathinda
- Punjab University, Chandigarh
- DAV College, Chandigarh
- Geetanjali University, Udaipur
- Khalsa College, Amritsar



Top Medical colleges of India:

1. All India Institute of Medical Sciences (AIIMS), New Delhi
2. Post Graduate Institute of Medical Education and Research
3. Christian Medical College & Hospital (CMC), Vellore
4. Sanjay Gandhi Postgraduate Institute of Medical Sciences
5. Amrita Institute of Medical Sciences & Research
6. Banaras Hindu University
7. Kasturba Medical College
8. Jawaharlal Institute of Post Graduate Medical Education & Research
9. Institute of Liver and Biliary Sciences
10. King George's Medical University

Degree/Diploma in Engineering and Technology

1. B.Tech. In Electrical Engineering

"Engineers like to solve problems. If there are no problems handily available, they will create their own problems."

– Scott Adams

B.Tech in Electrical Engineering is a 4-year degree course where the eligibility of admission to this course is 10+2 pass or equivalent from a recognized board or university.



Electrical engineering is a discipline focused with the study and application of equipment, devices and system which use electricity, electronics and electromagnetism. Electrical Engineering course study includes Circuit analysis, machines and drive system, Power System, Control system, Power electronics, Utilization etc. The main focus of the course will be on industrial requirement of 'Electrical engineering'.

Electrical Engineers have immense job opportunities in both private and public sectors. Shell, TATA technologies, DRDO, Dr.Reddy's Laboratories, HCL technologies, Google, Microsoft, Power grid corporation of India Ltd, Samsung, Sony Corporation are examples of some sectors who hire electrical engineers.

Some prominent Institutes offering B.Tech. Electrical Engineering:

- IIT, Guwahati
- Assam Engineering college, Guwahati
- Jorhat Engineering college
- NIT, Thiruchirapalli
- The Neotia University
- Chandigarh University
- NIT, Warangal
- JIST, Jorhat

2. B.Tech in Mechanical Engineering

"A good scientist is a person with original ideas. A good engineer is a person who makes a design that works with as few original ideas as possible. There are no prima donnas in engineering"

- Freeman Dyson

B.Tech. in Mechanical Engineering is a 4-year undergraduate course and is one of the most sought-after degree courses in engineering stream.

B.Tech in Mechanical Engineering is the branch of engineering that involves production, designing, and operations of machines. The prime objective of mechanical engineering is to prepare students for applying the principles of mechanical engineering for designing, manufacturing, and maintenance of mechanical systems.

JEE Main, BITSAT, COMEDK, UPSEE, VITEEE, SRMJEEE are some entrance exams conducted for admission to various Mechanical Engineering colleges.



Some prominent offering B.Tech. Mechanical Engineering

- Indian Institute of Technology, New Delhi
- Assam Engineering college
- Jorhat Engineering college
- Indian Institute of Technology, Kharagpur
- Indian Institute of Technology, Varanasi
- National Institute of Technology, Warangal
- National Institute of Technology, Silchar

3. B.Tech. in Civil Engineering

"When engineers and quantity surveyors discuss aesthetics and architects study what cranes do we are on the right road."

- Ove Arup

Bachelor of Technology (B.Tech.) in Civil Engineering is an undergraduate engineering course of 4-year duration where the eligibility of admission to this course is 10+2 pass or equivalent from a recognized board or university.

Civil Engineering is not that much popular choice due to the high demand in software and electronics courses for the past two decades. But, with India's growing economy and lagging infrastructure, it is becoming increasingly evident that India needs skilled, qualified and bright civil engineers. Civil engineer can get placed in various public and private sector with a healthy remuneration.

There are options for higher studies after the completion of B.Tech. course

- Structural Engineering
- Architectural Engineering
- Geotechnical Engineering
- Environmental Engineering etc.



Some prominent offering B.Tech. in Civil Engineering

- Assam Engineering college
- IIT, Guwahati
- Assam Science and Technology University, Guwahati
- Jorhat Engineering College

4. B.Tech in Computer Science

"Bringing computers into the home won't change either one, but may revitalize the corner saloon."
— Alan J. Perlis

B. Tech is a 4-year course divided into 8 semesters with 2 semesters each year. The admission process for this course is through entrance exams like JEE, CUSATCAT, TANCET, SET etc.

Computer Science deals in Information and Computation of data and applications. This course enables students to increase their basic knowledge in the related field of study. There is a huge demand for CS professionals and students can also pursue higher education course such as M.E./ M.Tech. in Computer Science after B.Tech. Computer Science course.

B.Tech. Computer Science graduate has various Career Options and Jobs to choose from. They can work in profiles such as Software Engineer, Testing Engineer, System Analyst and Technical Support Engineer.



Some prominent institutes offering B.Tech. Computer Science:

- Department of Computer Science and Engineering, Indian Institute of Technology Guwahati
- Assam Engineering College
- Department of Computer Science & Engineering, Assam University, Silchar
- Jorhat Engineering College
- PES University, Bangalore
- Rajasthan Technical University, Kota
- Tezpur University
- Bhartiya Vidyapeeth University, Pune
- BITS, Hyderabad
- Assam Science and Technology University, Guwahati

5. B.Tech. in Aeronautical Engineering:

"Having a mother who had been an aeronautical engineer convinced me that more things should be open to women."

— Elizabeth



B.Tech in Aeronautical Engineering is a 4-year undergraduate course where the eligibility of admission to this course is 10+2 pass or equivalent from a recognized board or university.

Aeronautical engineering is the primary branch of engineering behind the design, construction, and science of aircraft and spacecraft. The former deals with craft that stay within Earth's atmosphere, and

the latter deals with craft that operates outside of Earth's atmosphere.

Such postgraduates are hired in capacities such as Professor, Analysis Engineer, Instructor/Assistant Instructor, Design Engineer, Corporate Trainer cum Design Engineer, System Safety Management Engineer, Aerospace Chief Engineer, Lecturer & Professor etc.

Some prominent institutes offering B.Tech. Aeronautical Engineering:

- MIT, Manipal
- The Neotia University, Kolkata
- Amity University, Noida
- Chandigarh University
- BITS, Hyderabad

6. B.Tech in Automobile Engineering:

"Take care of your car in the garage, and the car will take care of you on the road."

— Amit Kalantri

The course duration for B.Tech in Automobile Engineering is 4 years and admission most of the colleges is done through various entrance tests conducted at national and state level.

B.Tech program in Automobile engineering deals with the study of various engines and their construction, electrical systems, alternative fuels, safety, economics and quality of an automobile. Candidates must have considerable understanding and interest in mechanics, electronics, and mathematics as these are vital skills required for making a good growth in Automobile Engineering.



The Automobile Engineering graduates are placed in organizations specializing in products and services related to the automobile industry, software solutions, production and technology like Tata Motors, Mahindra & Mahindra, Daimler India Ltd, Honda, and Tata Consultancy Services.

Some prominent Institutes offering B.Tech. Automobile Engineering:

- MIT, Manipal
- SRM Engineering College
- The Neotia College, Kolkata
- Amity University, Noida
- Chandigarh University

7. B.Tech in Biochemical Engineering:

"Proteins are the machinery of living tissue that builds the structures and carries out the chemical reactions necessary for life."
— Michael Behe

A branch of engineering that deals with the study, design and construction of unit processes that involve biological organisms or molecules is known as Biochemical Engineering. It is a study that deals with chemical engineering, biochemistry and microbiology.

The prime objective of this branch is to train students in biotechnology, biochemical engineering, microbial and enzyme systems. This will help them in understanding the biological or biochemical phenomena of these systems.

Apart from it, Biochemical Engineering also deals with the kinetics of growth, death and metabolism, agitation, fermentation, mass transfer and enzyme technology.



Top Institutes offering Biochemical Engineering:

- All India Institute of Medical Sciences
- Amravati University
- Anna University, Centre for Biotechnology
- Banaras Hindu University
- Banasthali Vidyapeeth
- Bharathiyar University

8. B.Tech in Biomedical Engineering:

"My ambition was to bring to bear on medicine a chemical approach. I did that by chemical manipulation of viruses and chemical ways of thinking in biomedical research."

— Jonas Salk

B.Tech in Bio-Medical Engineering (B.Tech BME) is an undergraduate course in engineering that applies the principles and problem-solving techniques of engineering to biology and medicine.

Bioengineering uses engineering tools to solve problems and contribute to medical industry. Here, the course is made up of multidiscipline engineering branches like electrical, chemical, mechanical and computer engineering to solve problems in medicine and biology.



Some prominent Institutes offering Biomedical Engineering:

- VIT, Vellore
- NIT, Rourkela
- MIT, Manipal
- Chandigarh University
- BITS, Hyderabad

9. B.Tech in Biotechnology:

"If only the human body could handle trauma as well as biotechnology stocks do, and
– Alex Berenson

B.Tech in Biotechnology is an under-graduate engineering program of 4 years that utilizes the concepts of Biology and Technology to develop trained professionals in the field of Biotechnology.

It is a multi-disciplinary course designed to expose the students to recent exciting developments in the area of Biotechnology and their application in industry, agriculture and medicine.

Different certification courses are available that are mentioned below:

- Certificate in Advanced Biotechnology
- Certificate in Biotechnology and Plant Tissue Culture

Some prominent Institutes offering B.Tech. in Biotechnology:



- Indian Institute of Technology, Kharagpur
- P.S.G. College of Technology, Coimbatore
- Delhi Technological University, Delhi
- National Institute of Technology, Warangal
- Vellore Institute of Technology, Vellore

10. B.Tech in Food Technology engineering:

"The secret of success in life is to eat what you like and let the food fight it out inside"

– Mark Twain.

B.Tech in Food Technology Engineering is a 4- year full time course divided into 8 semesters. The course focuses on the science of food and processes involved in food making and production. Food technology helps devise technology to battle situations like deteriorating food security, depleting energy sources etc. It involves exploration of the

stages involved in food production from raw materials to a larger diversity of processed and preserved food.

Some prominent Institutes offering Food Technology engineering:

- Jadavpur University, Faculty of Engineering and Technology, Kolkata
- Jadavpur University, Kolkata

11. B.Tech in Industrial Biotechnology

"Biotechnology is creating a new industrial revolution based on biology instead of petroleum. As biotech processes replace old rust-belt technologies, they are enabling a transformation from a petroleum-based economy to a bio-based economy".

– Brent Erickson

B.Tech in Industrial Biotechnology is an undergraduate programme in the field of engineering. It is a rather lesser known B.Tech specialization when compared to giants like Mechanical and Computer Science but it is one of the rapidly growing industry.

Industrial Biotechnology targets to enable the engineers to utilize biotechnology for various industrial applications like the manufacturing of new products and biomaterials, obtain alternative energy and biofuels. This branch of science blends the principles of biology and chemistry by using living organisms like bacteria and enzymes for productive developments in the industrial sector.



Some prominent Institutes offering B.Tech. in Industrial Biotechnology:

- Government College of Technology, Coimbatore
- Anna University, Chennai
- The Neotia College, Kolkata
- Chandigarh University
- BITS, Hyderabad

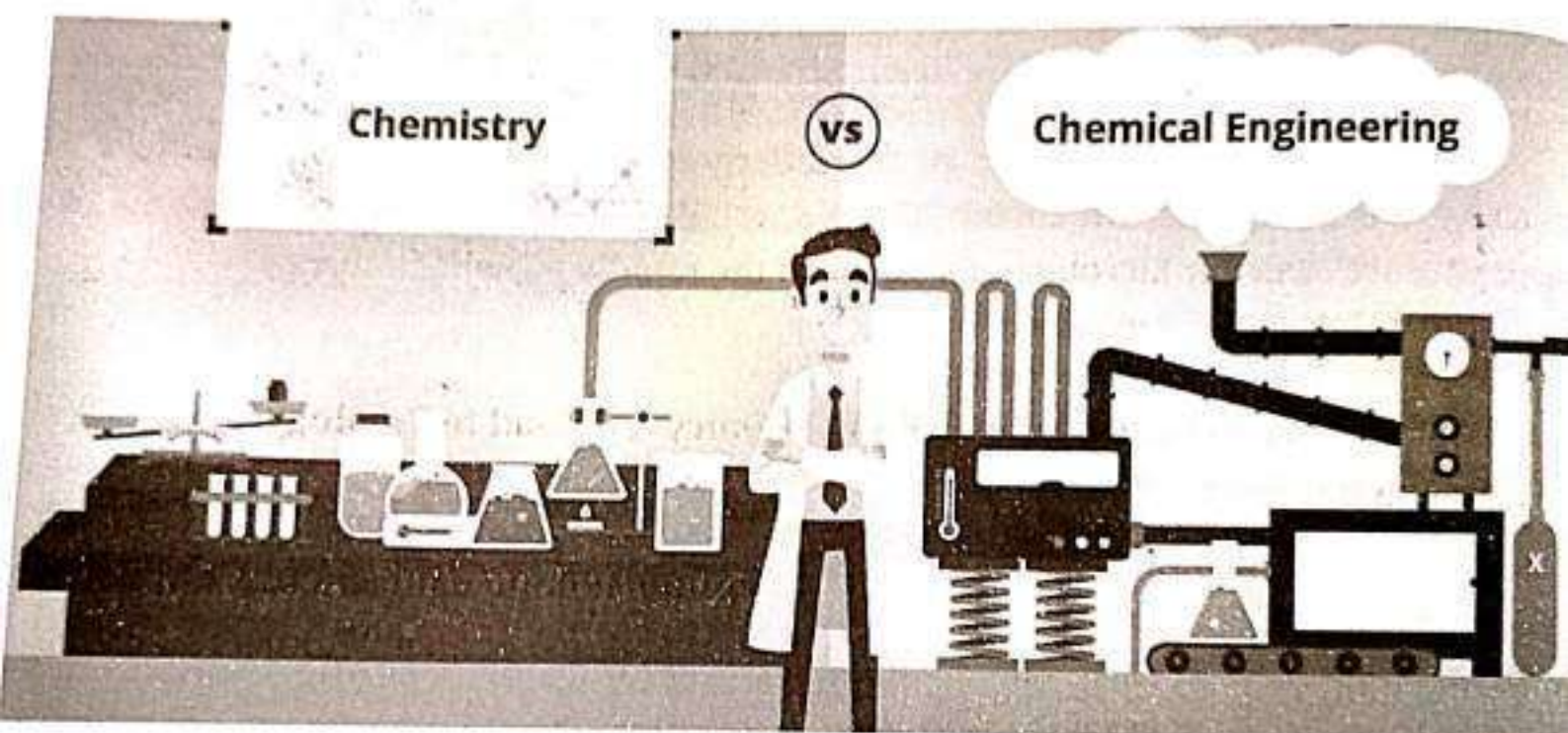
12. B.Tech in Chemical Engineering:

Chemical Engineers are not gentle people, they like high temperatures and high pressures.

— Steve LeBlanc

Bachelor of Technology (B.Tech) in Chemical Engineering is a four year undergraduate degree engineering based on the fundamentals of mathematics, physics and chemistry. The main role of a chemical engineer is to design processes for the production of chemical, fuels, food, pharmaceuticals, etc.

Chemical engineering degree offers jobs in different sectors like Oil, Gas and Energy, Manufacturing and consumer goods, Pharmaceuticals, Chemical Industries and various PSUs.



Some prominent Institutes offering B.Tech. in Chemical Engineering:

- IIT Bombay
- IIT Delhi
- IIT Madras
- IIT Roorkee
- BITS Pilani
- ICT Mumbai
- IIT Guwahati

13. B.Tech. In Dairy and food technology:

"Condensed milk is wonderful. I don't see how they can get a cow to sit down on those little cans"
— Fred Allen

B. Tech. in Dairy Technology famously known among the masses is a 4-year long undergraduate engineering degree course, which involves training of the students extensively in the production, processing and quality control of dairy-related products.

The prime objective of the course is to make these young students well versed with each and every detail of dairy production, processing, and quality control checks required for various dairy-related products. B.Tech in Dairy Technology Syllabus cover topics which involve basics of dairy technology, physical chemistry of milk, introduction to dairy microbiology, cheese technology and dairy engineering etc.



Some prominent Institutes offering B.Tech. in Dairy and food technology:

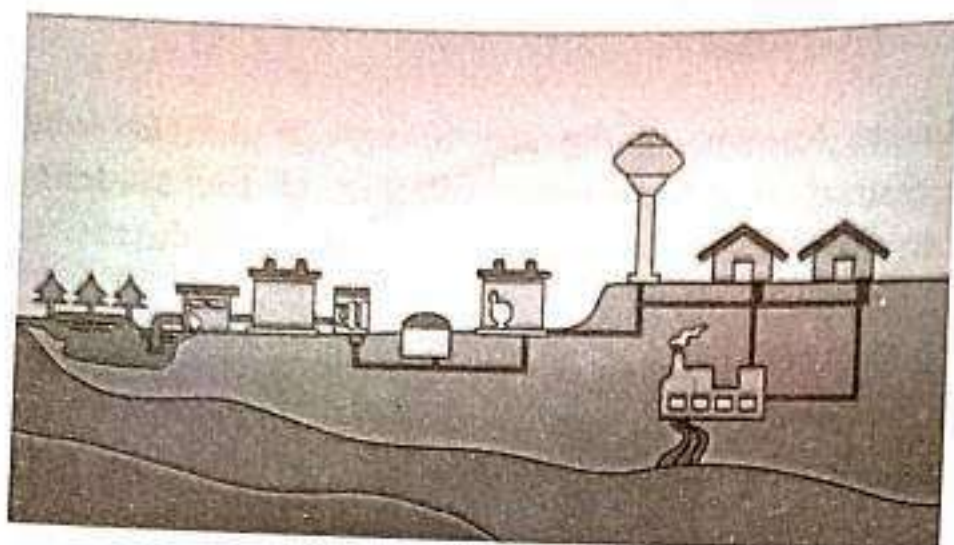
- Osmania University, Hyderabad
- The Neotia College, Kolkata
- Chandigarh University
- BITS, Hyderabad
- Anna University, Chennai

14. B.Tech. In Water resource engineering:

"Between earth and earth's atmosphere, the amount of water remains constant, there is never a drop more, never a drop less. This is a story of circular infinity, of planet birthing itself"
— Linda Hogan

B.Tech in Water Resources Engineering is a 4-year undergraduate engineering course which is a specialized branch of civil engineering. It involves the designing of new systems

and equipment that help manage human water resources. It is an agricultural engineering course wherein the engineers are responsible for the planning, development and management of water resources.



Students pursuing the course Water Resources Engineering are trained on the institutional, social, economic, and policies related to water resources development and management. They also study the physical processes of water which is essential to understanding, protection, and improvement of the environment.

Some prominent Institutes offering B.Tech. In Water resource engineering:

- Maharaja Sayajirao University of Baroda, Vadodara
- Indian Institute of Technology Kharagpur
- College of Engineering, Guindy
- College of Technology, GB Pant University of Agriculture and Technology, Pantnagar
- Mahatma Phule Krishi Vidyapeeth, Rahuri

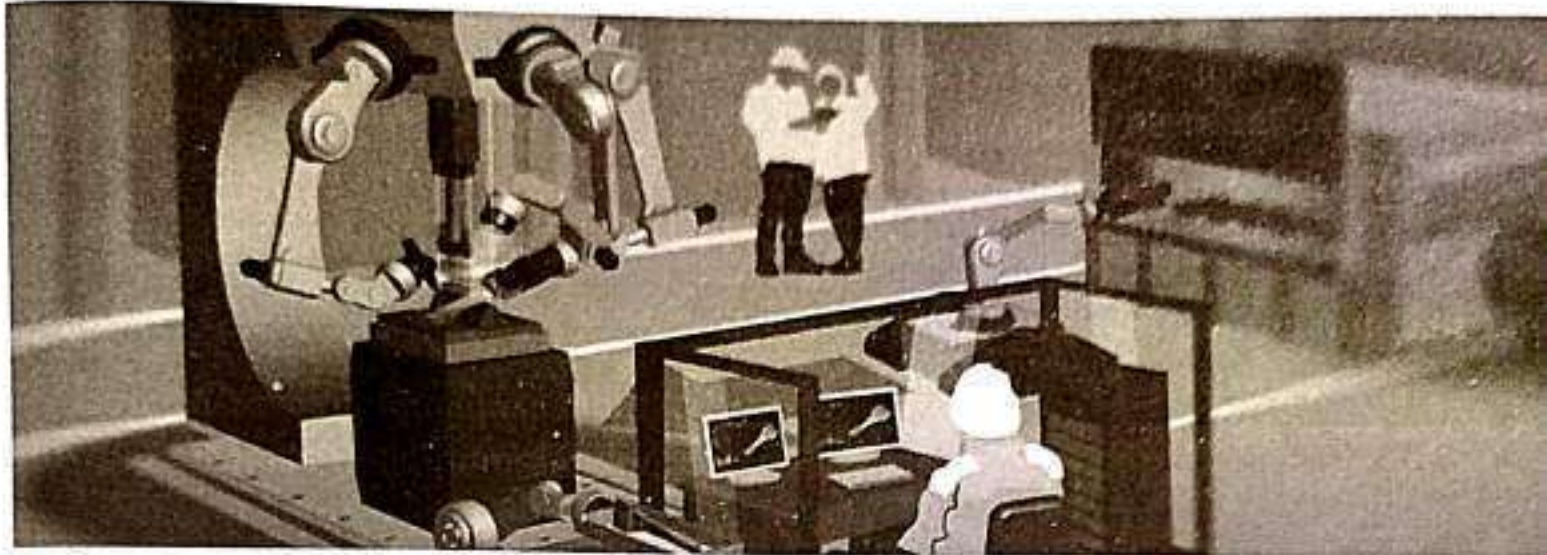
15. B.Tech. In Manufacturing Science & Engineering

"A designer must always think about the unfortunate production engineer who will have to manufacture what you have designed; try to understand his problem"

– Raymond Loewy

B.Tech. in Manufacturing Engineering is a 4-year undergraduate course covering a wide range of activities like mechanical properties, process analysis, machine tools and other related processes.

Manufacturing Engineering is a methodical process of changing raw materials into finished goods. Manufacturing Engineering course includes all methods beginning from product design through various processes and tools and enables the engineer to optimize the resources available to him or her in order to produce a superior product at low cost and meet the needs of the user.



Some prominent Institutes offering B.Tech. in Manufacturing Science & Engineering

- Ranchi University, Ranchi
- Hindustan University of Technology and Science, Chennai
- IIT, Kharagpur
- The Neotia College, Kolkata
- Chandigarh University

16. B.Tech. in Marine Engineering:

"Ships are my arrows, the sea my bow, the world my target."

— Robert Thier

B.Tech in Marine Engineering is a 4-year undergraduate course where students are equipped with skills required to design, construct and maintain the structures around or on water. This branch of engineering is largely focused on nautical architecture and science.

Marine Engineering graduates can find immense career options and jobs in marine facilities, warehousing and logistics sector, the transportation sector, shipping industry, shipyards, offshore drilling platforms, marine engineering service etc. The students are trained in techniques and technologies used in construction and maintenance of harbours, ships and oil platforms. It mainly deals with systems and machinery of ships and other marine structures, vessels and vehicles.

Some prominent institutes offering B.Tech. in Marine Engineering

- Indian Maritime University, Chennai
- Cochin University of Science and Technology
- The Neotia College, Kolkata
- Chandigarh University
- BITS, Hyderabad

17. B.Tech. in Metallurgical Engineering:

"Manufacturing, science and engineering are incredibly creative. I'd venture to say more so than creative advertising agencies and things that are known as the creative industries."

— Sir James Dyson

Bachelor of Technology in Metallurgical Engineering is an undergraduate program requiring four years for completion and is offered by universities/institutes in the field of metallurgy.

To be precise, Metallurgical engineering is the study of metal. The course offers combined study of theory and practice, this program covers the mining, extraction, design and processing of metals along with fundamental engineering principles.

It also includes separating metals from their ores, the making and compounding of alloys, and the technology and science of working and heat-treating metals to alter their physical characteristics.

Some prominent Institutes offering B.Tech. in Metallurgical Engineering:

- Indian Institute of Technology, Varanasi
- College of Engineering, Pune
- Birsa Institute of Technology, Dhanbad
- National Institute of Technology, Raipur
- Jawaharlal Nehru Technological University, Kakinada



18. B.Tech. in Mining Engineering:

"The mining industry might make wealth and power for a few men and women, but the many would always be smashed and battered beneath its giant treads."

— Katharine Susannah Prichard

B. Tech in Mining Engineering is a 4-year undergraduate course that deals with the theory, science, application and technology of processing and extracting resources from the natural environment.

B. Tech in Mining Engineering is concerned with teaching the students how to cope up with the demands for mineral of all kinds in an efficient and sustainable manner. This course fulfils the rising demand for mining engineers. Mining Engineering Syllabus equips the students with a tendency to constantly look for innovative methods of mining that mitigate the resultant damage by the mining process.



Some prominent Institutes offering B.Tech. in Mining Engineering:

- IIT, Kharagpur
- IIT, Varanasi
- NIT, Rourkela
- The Neotia College, Kolkata
- Chandigarh University
- BITS, Hyderabad
- BITS, Hyderabad

19. B.Tech in Petroleum Engineering:

B. Tech in Petroleum Engineering is a 4-year undergraduate course which comes with an interesting field offering various specialization courses that deal with the production of hydrocarbons, which can either be natural gas or crude oil. The technical field of petroleum engineering requires a detailed understanding of the physical properties of oil, gas, and water along with the process of oil exploration and processing of crude oils.



There are two major specializations under the discipline of petroleum engineering:

- **Petroleum Upstream Engineering** - This is a preliminary field concentrating fundamentals of exploration and production of oil and gas.
- **Petroleum Downstream Engineering** - This type of specialization deals with practical aspects of processing techniques of petroleum refinery and natural gas, including the production phase, cost estimating and budgeting.

Apart from these 2 major specializations, there are three sub-branches of petroleum engineering:

- **Reservoir Engineering** involves the assessment of oil and gas deposits, preferably focusing on the estimation part of the reservoirs. It includes surveillance engineers, production engineers, simulation engineers and geothermal engineers
- **Drilling Engineering** deals with the process of drilling the well to extract gas or oil considering the cost factor and environment safety. Drilling engineers either work in an office or on offshore sites.
- **Production Engineering** is the designing and selecting of the equipment to be used for the extraction purpose of oil and gas.

Some prominent Institutes offering B.Tech in Petroleum Engineering:

- IIT, Dhanbad
- VELS University, Chennai
- LPU, Jalandhar
- The Neotia College, Kolkata
- Chandigarh University