ENGINEERING STREAM

STREAMS AFTER 10TH AND DEGREE COURSES IN PURE STREAMS

Science-A Group (Physics, Chemistry & Mathematics)
Engineering/Technology/Architecture/Design

Streams after 10th and Degree Courses in Pure Streams

Science-A Group (Physics, Chemistry & Mathematics) Engineering/Technology/Architecture/Design

Degrees / Branches	Duration	Professions
B. Tech. (Bachelor of Technology)	4 Years	Engineer, Mathematician, Scientist, Architect, Commercial Pilot, Astronaut, Naval Officer, Physicist, Statistician, Interior Designer, Fashion Designer, Automobile Designer, Town Planner, Chemist
B. E. (Bachelor of Engineering)	4 Years	
B F. Tech. (Bachelor of Fashion Technology)	4 Years	
B. Arch. (Bachelor of Architecture)	5 Years	
B. Plan (Bachelor of Planning)	4 Years	
B.I.D (Bachelor of Interior Design)	4 Years	
B. Des. (Bachelor of Design)	4 Years	

Branches in Engineering/Technology

Aerospace	Computer Science	Industrial	Mining Machinery
Agricultural & Food	Electrical	Instrumentation	Naval Architecture
Architecture	Electronics	Manufacturing Science	Ocean Engineering
Automobile	Electronics & Communication	Marine	Petroleum
Biochemical	Electronics & Electrical	Materials Science	Plastic
Biological Sciences	Electronics & Electrical Com.	Mathematics & Computing	Polymer Science
Biotechnology	Electronics & Instrumentation	Mechanical	Production
Ceramic	Engineering Physics	Metallurgical	Textile Technology
Chemical	Engineering Science	Mineral	
Civil	Environmental	Mining	

Other Degrees/Branches includes:

➢ **B.S.(Bachelor of Science) -> 4 years**

➢ **Dual Programs in Engineering (B.Tech. + M.Tech.) -> 6 years**

CAREER PROSPECTS

Higher Studies in Management or Technical field	Prepare for Civil Service Exams	Job in Technical Company
Start own Business / Technical Venture	Research and Academics	Join Armed Forces

Colleges with admissions based on entrance exams

Top IITs in India	Top IIITs in India	Top NITs in India		List of other Top Colleges in India	List of other Top Colleges in Gujarat
• Mumbai	• Gwalior	• Allahabad	• Warangal	• BITS Pilani	• IIT, Gandhinagar
• Roorkee	• Allahabad	• Bhopal	• Arunachal	• Delhi College of Engineering	• SVNIT, Surat
• Delhi	• Kancheepuram	• Calicut	Pradesh (Yupia)	• VIT, Vellore	• Nirma, Ahmedabad
• Kanpur	• Jabalpur	• Durgapur	• Sikkim	• PSG Technology Coimbatore	• MSU, Vadodara
• Madras	• Kurnool	• Hamirpur	• Goa	• National Institute of	• DAIICT, Gandhinagar
• Guwahati	• Chittoor	• Jaipur	• Meghalaya	• Engineering, Mysore	• PDPU, Gandhinagar
• Kharagpur	• Guwahati	• Jallandhar	• Nagaland	• BIT Ranchi	• DDIT, Nadiad
• Hyderabad	• Kalyani	• Jamshedpur	• Manipur	• NSIT, New Delhi	• Charotar University Petlad
• Varanasi	• Una	• Kurukshetra	• Mizoram	• College of Engineering, Pune	• CEPT University, Ahmedabad
• Ropar	• Vadodara	• Nagpur	• Uttarakhand	• Faculty of Engineering &	• Vishwakarma Engineering
• Bhubaneswar	• Kota	• Patna	• Delhi	• Technology, Jamia Millia Islamia	• College, Ahmedabad
• Mandi	• Tiruchirappalli	• Raipur	• Puducherry	• VJTI, Mumbai	• LDCE, Ahmedabad
• Patna	• Sonepat	• Rourkela	• Agartala	• KJ Somaiya, Mumbai	• IITRM, Ahmedabad
• Gandhinagar	• Senapati	• Silchar	• Andhra Pradesh	• S P College, Mumbai	• IICT, Ahmedabad
• Indore	• Lucknow	• Srinagar		• ISM Dhanbad	• Govt. Engineering College,
• Jodhpur	• Kottayam	• Surat		• College of Engineering	Surat
• Palakkad	• Dharward	• Surathkal		• Guindy, Chennai	• SVIT, Vasad
• Tirupati	• Pune	• Tiruchirapalli		• PEC Uni. Chandigarh	• BVM, Vidyanagar
• Dhanbad	• Bhopal			• Manipal Institute of	• LJ Institute of
• Bhilai	• Agartala			• Technology, Manipal	Engineering and
• Goa	• Kakinada			• HBTI Kanpur	Technology
• Jammu	• Nagpur			• Thapar University, Patiala	
• Dharwad	• Ranchi			• MIT Pune	
	• Surat				

For List of Colleges of B Ftech. (Bachelor of Fashion Technology), B. Arch. (Bachelor of Architecture), B. Plan (Bachelor of Planning), Dual Programs in Engineering (B.Tech.+M.Tech.), visit www.mohitmangal.com

	Exam	Selection Process & Test Pattern	No. of Questions	Marks	Tentative Schedule & Remarks
ALL ABOUT ENTRANCE EXAMS	**JEE Main- Paper 1** www.jeemain.nic.in Time: 3 Hours Timing : NA Mode: Computer Based/ Pen & Paper	Maths Physics Chemistry Total Questions	30 Questions 30 Questions 30 Questions 90 Questions	120 Marks 120 Marks 120 Marks	Forms Out: Oct./ Nov. Last Date: Dec./ Jan. Test: April Negative Marking: +4/ -1 Total Marks: 360 Forms Available: Online
	JEE Main- Paper 2 www.jeemain.nic.in Time: 3 Hours Timing : NA Mode: Pen & Paper For B. Arch Only	Maths Aptitude Test Drawing Test Total Questions	30 Questions 50 Questions 02 Questions 82 Questions	120 Marks 200 Marks 70 Marks	Forms Out: Oct./ Nov. Last Date: Dec./ Jan. Test: April Negative Marking: +4/-1 Total Marks: 390 Forms Available: Online
	JEE Advanced- Paper 1 www.jeeadv.ac.in Time: 3 Hours Timing : NA Mode: Pen & Paper	Maths Physics Chemistry Total Questions	18 Questions 18 Questions 18 Questions 54 Questions	62 Marks 62 Marks 62 Marks	Form Out: JEE Mains Results Last Date: Open For About 10 Days Test Date: May/June Negative Mark.: Variable Forms Available: Online Eligible: 75% in 12th 200000 Rank in JEE Main First 20 Percentile of Board Total Marks: 186
	JEE Advanced- Paper 2 www.jeeadv.ac.in Time: 3 Hours Timing : NA Mode: Pen & Paper	Maths Physics Chemistry Total Questions	18 Questions 18 Questions 18 Questions 54 Questions	62 Marks 62 Marks 62 Marks	Form Out: After JEE Mains Result Last Date: Open For About 10 Days Test Date: May/June Negative Mark.: Variable Forms Available: Online Eligible: 75% in 12th 200000 Rank in JEE Main First 20 Percentile of Board Total Marks: 186

BITSAT www.bitsadmission.com Time: 3 Hours Timing : NA Mode: Computer Based	Physics Chemistry English Logical Reasoning Maths/ Bio (for B. Pharm) Total Questions	40 Questions 40 Questions 15 Questions 10 Questions 45 Questions **150 Questions**	120 Marks 120 Marks 45 Marks 30 Marks 135 Marks	Form Out: Jan./ Feb Last Date: March Test Date: May Negative Marking: +3/-1 Total Marks: 450 Forms Available: Online
VIT www.vit.ac.in Time: 2.5 Hours Timing : NA Mode: Computer Based	Physics Chemistry Maths/Bio English Total Questions	40 Questions 40 Questions 40 Questions 05 Questions **125 Questions**	40 Marks 40 Marks 40 Marks 05 Marks	Form Out: Jan./ Feb Last Date: March Test Date: May Negative Marking: +1/ 0 Forms Available: Online and Selected PO Eligibility: 60% in 12th* Total Marks: 125
Symbiosis www.sitpune.edu.in Time: 2.5 Hours Timing : NA Mode: Pen & Paper	Physics Chemistry Maths Total Questions	25 Questions 25 Questions 50 Questions **100 Questions**	50 Marks 50 Marks 100 Marks	Form Out: Feb./March Last Date: April Test Date: May Negative Marking: +2/0 Total Marks: 200 Forms Available: Online
SRM www.srmuniv.ac.in Time: 2.5 Hours Timing : NA Mode: Computer Based	Physics Chemistry Maths Biology (for Health Science) Total Questions	35 Questions 35 Questions 35 Questions 50 Questions **155 Questions**	105 Marks 105 Marks 105 Marks 105 Marks	Form Out: Jan./Feb. Last Date: March Test Date: April Negative Mark.: PCM+3/-1 Bio. +2.1/0.7 Total Marks: 420 Forms Available: Online
NATA www.nata.in Time : 3 Hours Timing : NA Mode: Pen & Paper	Mathematics General Aptitude Drawing Total Questions	30 Questions 30 Questions 2 Questions **62 Questions**	60 marks 60 marks 80 marks 200 marks	Form Out: Mid Dec Form Date: Mid Feb. Test Date: Mid April Negative Marking : Nil Total Marks: 200 Forms Available: Online

• The Details given above are tentative and have been prepared as per trends of previous years. • Please visit individual exam/institute website for exact details.

• For Further Updates keep visiting Notifications page on www.mohitmangal.com

ENGINEERING

Joint Entrance Examination (JEE) Main
Purpose - For Admission in B. E./B. Tech., B. Arch., B. Planning
Eligibility - Class 12 pass (PCM)
Application mode - Online
Source: IIT- Joint Entrance Exam with PCM

JEE Advanced
Purpose- Admission in UG programmes in IITs
Eligibility - Class 12 Pass (PCM)
Application mode -Online
Source: http://jeeadv.iitd.ac.in/

BITSAT
Purpose - Admission in Integrated First Degree programmes in BITS Pilani, Goa & Hyderabad campuses.
Eligibility - Class 12 pass (PCM)
Application mode - Online
Source: www.bitsadmission.com/

National Level Engineering Entrance Exams		
S.No.	Exam Name	Website URL
1	BITSAT	http://www.bitsadmission.com
2	COMED-K	https://www.comedk.org/
3	IPU-CET (B. Tech)	www.ipu.ac.in
4	Manipal (B. Tech)	https://manipal.edu/mu/academics.html
5	VITEEE	www.vit.ac.in
6	AMU (B. Tech)	http://www.amucontrollerexams.com/
7	NDA Entrance with PCM (MPC)	https://www.nda.nic.in/eligibility%20criteria.html
8	All India Engineering Entrance Exam with PCM (MPC)	http://www.jeemain.nic.in
9	State Level Engineering Entrance Exams	Andhra Pradesh - https://apeamcet.nic.in/Default.aspx
		Karnataka -https://cetonline.karnataka.gov.in/kea/
		Kerala - http://www.cee-kerala.org/
		Maharashtra - http://www.dtemaharashtra.gov.in/
		West Bengal - http://www.wbjeeb.in/
		Chattisgarh - PET - Chattisgarh - PET
		Gujarat - CET (B.Tech) - http://dte.gswan.gov.in/edte/
		Jammu and Kashmir - CET (B.Tech) - https://jkbopee.gov.in/
		Odisha - JEE (B.Tech) - http://ojee.nic.in/publicinfo/Public/View.aspx?page=71
		Uttar Pradesh - JEE - http://www.jeecup.org/

LIST OF COURSES:

AERONAUTICAL ENGINEERING

Introduction

A course in Aeronautical Engineering includes the designing, manufacturing, testing and maintenance of aircraft in commercial aviation and defence sectors and involves the study of advanced level Physics and Mathematics.

Eligibility

Under graduate Level:

10+2 examination with Physics, Mathematics, Chemistry

Post Graduate Level

Undergraduate degree in Aeronautical / Aerospace A 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

1. B. Tech in Aeronautical Engineering
2. B.E. in Aeronautical Engineering
3. M. Tech in Aeronautical Engineering
4. M. Tech in Avionics
5. M.E. in Aeronautical Engineering
6. M.E. in Avionics

Institutes/Universities

1. Institute of Aeronautical Engineering , Hyderabad
2. Manipal Institute of Technology, Manipal University, Manipal
3. Hindustan Institute of Technology and Science, Hindustan University, Chennai
4. Institute of Aeronautical and Marine Engineering, Bengaluru
5. PEC University of Technology, Chandigarh
6. Madras Institute of Technology, Anna University, Chennai
7. Indian Institute of Aeronautical Engineering & Information, Technology (IIAEIT), Pune.
8. CIIAE (Centre for Internationally Recognised Aeronautical/Aerospace/Aircraft Engineering), Dehradun
9. Indian Academy of Aeronautical Technology, Lucknow

AEROSPACE ENGINEERING

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 astronautical engineering that deals with spacecrafts that operate outside the earth's atmosphere.

Eligibility

Under graduate Level
10+2 with Physics, Chemistry and Mathematics or equivalent examination. The IITs consider score of JEE and other institutions have their own separate entrance exams.

Post Graduate Level

Undergraduate degree in Aeronautical/ Aerospace or related Engineering, or passed both Sections.

Doctoral Level

Must have completed Post-graduation in Aeronautical / Aerospace Engineering
Must have a valid GATE score

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

ARCHITECTURE ENGINEERING

Introduction

Architecture is the science that deals with planning, designing, safety, affordability, and supervision of construction works for houses, office buildings, skyscrapers, landscapes, or entire cities.

Eligibility

10+2 level with Science Stream

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

Courses

1. B. Arch.
2. M. Arch.
3. Ph. D Programmes

Institutes/Universities

1. Indian Institute of Technology , Kharagpur
2. Indian Institute of Technology (IIT), Roorkee
3. Aligarh Muslim University Uttar Pradesh
4. Indian Institute of Engineering Science and Technology (IIEST), Shibpur, West Bengal
5. Birla Institute of Technology, Mesra, Ranchi
6. Anna University, Chennai
7. Centre for Environmental Planning and Technology (CEPT) University, Ahmadabad, Gujarat
8. Swami Vivekanand Technical University Chhattisgarh
9. School of Planning and Architecture Delhi
10. National Institute of Technology (NIT),Patna
11. National Institute of Technology, Hamirpur
12. Jamia Millia Islamia University
13. Jawaharlal Nehru Technological University Hyderabad
14. Department of Architecture and Planning Engineering, Nagpur

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

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

After, B Tech, valid GATE scores is required for M. Tech. CS/AI/IT, IC Technology and Bioinformatics

Institutes/ Universities

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

Courses

1. Machine Learning (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.

ASTRONOMY AND ASTROPHYSICS

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 with the help of laws of physics and 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)

Institutes/Universities

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

Courses

1. M.Sc. /M. Phil PhD (Physics)
2. M.Sc. Astronomy,
3. M.Sc. – Astrophysics
4. Integrated M. Tech- Ph. D (Tech.) programme 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)
5. Ph. D Astrophysics/Astronomy

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

1. B. Tech in Automobile Engineering
2. Dual Courses
3. M. Tech in Automobile Engineering

Institutes/Universities

1. University of Calicut, Malappuram, Kerala.
2. Maulana Abul Kalam Azad University of Technology, West Bengal.
3. Rajasthan Technical University, Kota, Rajasthan

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. Orthopaedic and rehabilitation engineering, molecular, cellular and tissue engineering are also a part of this discipline.

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

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

BIO TECHNOLOGY ENGINEERING

Introduction

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

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

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. 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,

Courses

1. Diploma in Biotechnology Engineering
2. Bachelor of Engineering in Biotechnology
3. Bachelor of Technology in Bioprocess Technology
4. Bachelor of Technology in Biotechnology and Biochemical Engineering
5. Bachelor of Technology in Biotechnology
6. Master of Engineering in Biotechnology
7. Master of Technology in Biotechnology

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.

Courses

1. B. Tech
2. M. Tech

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. 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

CHEMICAL ENGINEERING

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.

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

1. Indian Institute of Technology (IIT) Kharagpur
2. Indian Institute of Technology (IIT) Kanpur
3. Indian institute of Technology (Madras)
4. Andhra University, Visakhapatnam
5. Rajasthan Technical University, Kota, Rajasthan
6. Guru Gobind Singh Indraprastha University, Delhi

Courses

1. B. Tech
2. M. Tech

CIVIL ENGINEERING

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.

Eligibility

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

Institutes/Universities

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/)

Courses

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

COMPUTER SCIENCE ENGINEERING

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.

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.

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

Institutes/Universities

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

ELECTRICAL AND ELECTRONICS ENGINEERING

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.

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

Courses

1. B. Tech
2. M. Tech

ELECTRONICS AND COMMUNICATION ENGINEERING

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

INDUSTRIAL ENGINEERING

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.

Eligibility

10+2

Institutes/Universities

1. Indian Institute of Technology (IIT), Kharagpur
2. Indian Institute of Technology (IIT), Kanpur

Courses

1. B. Tech
2. M. Tech

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.

Eligibility

After 10+2

Courses

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

Institutes/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.

INSTRUMENTATION ENGINEERING

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

1. B.E. / B. Tech.
2. M.E. / M. Tech.
3. M. Phil.
4. 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

1. Bangalore Institute of Technology, Karnataka
2. Bharti Vidyapeeth College of Engineering, Maharashtra
3. BMS College Of Engineering, Karnataka
4. Dayananda Sagar Institute of Technology, Karnataka
5. M S Ramaiah Institute of Technology, Karnataka

MANUFACTURING SCIENCE & ENGINEERING

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

1. Indian Institute of Technology, Kharagpur
2. Ranchi University, Ranchi, Jharkhand.
3. Siddaganga Institute of Technology, Tumkur, Karnataka.

MARINE ENGINEERING

Introduction

Marine engineering deals with the nautical architecture and science and basically is meant for research conducted in oceans, coastal or inland waters connected to the sea. Marine engineers have the entire responsibility of the ship's technical management.

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.

Courses

1. Diploma in Marine Engineering
2. Bachelor of Engineering in Marine Engineering
3. Bachelor of Technology in Marine Engineering
4. Bachelor of Technology in Naval architecture & Ocean Engineering
5. Master of Technology in Air Armament
6. Master of Engineering in Marine Engineering
7. Master of Technology in Marine Engineering
8. Master of Technology in Ocean Engineering and Naval Architecture

Institutes/Universities

1. IITs
2. International Institute of Maritime Science, (West Bengal),
3. College of Engineering, (Andhra Pradesh),
4. Maharashtra Academy of Naval Education & Training, (Maharashtra),
5. Marine Engineering Research Institute, (West Bengal),
6. Lal Bahadur Shastri College of Advanced Maritime Studies & Research, (Mumbai).

MECHANICAL ENGINEERING

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.

Eligibility

(10+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

1. IITS
2. Achutha Institute of Technology, Bangalore (Karnataka)
3. Reva Institute of Technology and Management, Bangalore (Karnataka)
4. 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

Courses

1. Certificate in Mechanic of four Wheeler
2. Diploma in Mechatronics
3. Diploma in Mechanical Engineering
4. Bachelor of Engineering in Mechanical Engineering
5. Bachelor of Technology in Mechanical & Automation Engineering
6. Bachelor of Technology in Mechanical Engineering
7. Bachelor of Technology in Mechatronics
8. Master of Engineering in Mechanical Engineering
9. Master of Engineering in Tool Design
10. Master of Technology in Mechanical Engineering
11. Doctor of Philosophy in Mechanical Engineering

MEDICAL ELECTRONICS ENGINEERING

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

1. Bachelor of Engineering in Medical Electronics
2. Bachelor of Technology in Medical Electronics
3. 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

1. IITs
2. BMS College of Engineering, Bengaluru.
3. Dayananda Sagar College of Engineering, Bengaluru. AFFILIATED TO VTU, APPROVED BY AICTE & UGC, ACCREDITED BY NAAC
4. Dr. Ambedkar Institute of Technology, Bangalore. affiliated to Visvesvaraya Technological University, Belgaum and accredited by AICTE

METALLURGY

Introduction

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

Eligibility

10+2 in Science with Physics, Chemistry and Maths

Courses

1. Bachelor of Technology (B. Tech.) in Metallurgy and Materials Engineering:
2. Master of Technology (M. Tech.) in Material Science and Engineering:
3. B. E. / B. Tech. or equivalent in Metallurgical/ Materials/ Metallurgy and Materials/ Mechanical/Production/Ceramics Engineering;

Institutes/Universities

1. Indian Institute of Technology, Roorkee
2. Indian Institute of Technology (BHU), Varanasi.
3. National Institute of Technology, Tiruchirappalli.
4. Indian Institute of Engineering Science and Technology, Shibpur, Howrah, West Bengal.
5. Government College of Engineering, Salem, Tamil Nadu.
6. College of Engineering Pune, Maharashtra.
7. Government Engineering College, Gandhinagar, Gujarat.

METEOROLOGY

Introduction

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

Eligibility

12 with physics and chemistry

Courses

1. B. Tech./B. Sc.
2. M. Tech./M.Sc.
3. Ph. D.

Institutes/Universities

1. Cochin University of Science and Technology, Kerala.
2. Indian Institute of Technology (IIT), Delhi.
3. Andhra University, Vishakhapatnam, Andhra Pradesh.
4. Indian Institute of Technology (IIT) Kharagpur, West Bengal.
5. Shivaji University, Vidyanagar, Maharashtra.

MINING ENGINEERING

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

1. BE Mining Engineering
2. B. Tech Mining Engineering
3. Diploma in Mining and Mine Surveying Engineering
4. ME Mining Engineering
5. M. Tech Mining Engineering
6. PG Research Programme on Materials Resource Engineering
7. Ph. D Mining Engineering
8. 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 years.

Institutes/Universities

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

NAVAL ARCHITECTURE ENGINEERING

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

PHYSICAL SCIENCES

Introduction

Physical science is the study of physics and chemistry of nature. It overlaps life sciences in a way to include ecology and the evidence of historical facts of evolution.

Eligibility

10+2 or its equivalent with Mathematics, Physics, Chemistry

For IIT's, it is Mandatory to qualify in the Joint Entrance Examinations (J.E.E)

Courses

1. B. Sc / M. sc
2. B. Tech /M. Tech Biological Engineering

Institutes/Universities

3. Indian Institute of Technology, New Delhi
4. Indian Institute of Technology, Madras
5. Indian Institute of Technology, Guwahati
6. Indian Institute of Space Science and Technology, Thiruvananthapuram
7. Indian Institute of Technology, Bombay
8. National Institute of Technology, Calicut
9. Technology Education & Research Integrated Institutions Kurukshetra
10. Guru Gobind Singh Indraprastha University, New Delhi

POLYMER ENGINEERING

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.

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

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

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

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

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)

BIOTECHNOLOGY

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 Associateship for advanced research in molecular biology, microbial genetics, gene therapy, virology, tissue culture and so on.

COMPUTER APPLICATIONS

Introduction

The Computer Applications course is designed to provide the student with the opportunity to expand and apply technological knowledge.

Eligibility

10+2 or equivalent

Courses

1. Diploma in Computer Application
2. Bachelor in Computer Application
3. Master in Computer Application

Institutes/Universities

1. University of Madras, Chennai
2. Chhatrapati Shahuji Maharaj University, Kanpur,
3. University of Allahabad, Allahabad
4. University of Mumbai, Mumbai
5. National Institute of Electronics & Information Technology, New Delhi
6. Delhi University, 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.

COMPUTER SCIENCE

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 includes 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.

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

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

1. Ph. D

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/)

CYBER SECURITY

Introduction

Cyber Security deals with study of possible cyber threats and harms – technical, financial or personal. The course equips the professional to deal with many types of cybercrimes such as copyright breach, hacking, illegal mass-surveillance, computer virus, virtual pestering, identity threats, phishing etc.

The interest in technology, innovative ideas, problem solving prowess, logic & concept are expected from students who wish to join this new and challenging field.

Eligibility

10+2 Science Stream

Institutes/Universities

1. IIT Hyderabad
2. IIT Delhi
3. IIIT Guwahati
4. IIIT Allahabad
5. AIACT&R, DELHI

Courses

B. Tech in Cyber Security /B. Tech in Computer Science or IT followed by an M. Tech in either Information Security or Cyber Security

EARTH SCIENCES/GEOGRAPHY

Introduction

Earth Sciences deals with study and research in various fields and concepts of Geology, examination and utilization of natural resources their management, sustenance and conservation.

Earth Sciences/Geography, studies climatic/ weather conditions of different regions with periodic developments, their effects, natural resources like water, minerals survey, earth and ocean characteristics and its science, air, rain, clouds and rivers aspects, monitoring of geographical environments, forests and weather forecast. The special study are in this field like Economic & Political Geography, Human Geography, Cultural Geography, Environment and Natural Resources Studies. The other aspects of Geography include Geo-morphology, Climatology, Oceanography, Meteorology, Cartography, Geographic Information Systems and other allied areas.

Eligibility

10+2 or equivalent

Courses

1. BA with Geography as a subject
2. BA Honors (Geography)
3. Integrated M. Tech. (Geophysical Technology)
4. Integrated M. Tech. (Geological Technology)
5. M. Tech. Earth Sciences
6. M. Sc. (Applied Geology)
7. M. Phil. Geology
8. M. Phil. Geoinformatics
9. Ph.D. Geology
10. MA Geography
11. M. Sc Geography
12. M. Sc., M.Phil. & Ph. D
13. M. Sc. Geology (Five Year Integrated)
14. M. Sc. Geology (Two Year CBCS)
15. PG Diploma in Petroleum Geoscience
16. PG Diploma in Remote Sensing and GIS

Institutes /Universities

1. Indian Institute of Technology, Roorkee, Uttarakhand
2. Indian Institute of Science, Bangaluru
3. Bangalore University, Bengaluru
4. Kurukshetra University, Kurukshetra, Haryana,
5. University of Delhi
6. MD University, Rohtak, Haryana
7. Annamalai University, Annamalainagar, Tamil Nadu
8. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)

CAREER PROSPECTSMIN ALLIED HEALTH CARE PROGRAMES

AHS: UG courses

1. BSc Medical Lab Technology

2. BSc Medical Imaging Technology

3. BSc Renal Dialysis Technology

4. BSc Critical Care Technology

5. BSc Operation Theatre and Anesthesia Technology

6. BSc Cardiac Care Technology

7. BSc Physician Assistant

AHS: UG courses

8. BSc Cardio Perfusion Technology

9. BSc Clinical Nutrition and Dietetics

10. BSc Medical Record Science

11. BSc Respiratory Therapy

12. BSc Accident & Emergency Care Technology

13. BSc Clinical Psychology

14. B. Optometry

15. BASLP

16. BSc Neuroscience Technology

AHS: PG courses

1. MSc Medical Anatomy

2. MSc Medical Physiology

3. MSc Medical Biochemistry

4. MSc Medical Microbiology

5. M. Optometry

6. Master of Hospital Administration

7. MSc Audiology

8. MSc Speech Language Pathology

1. BSc Medical Lab Technology

- BSc. Medical Lab Technology course will enable you

    - To perform routine Clinical Laboratory testing.

    - To communicate with the other members of the health care team and patient effectively.

    - Process information and ensure quality control.

    - Able to work using automated machines and continuously upgrade your knowledge and skills.

1. BSc Medical Lab Technology

- Top recruiting Areas/Fields:

  – Laboratories in Medical College Hospitals, Corporate Hospitals, Research Labs.

- Job Positions:

  – Medical Lab Technologist, Senior Lab Technologist, Junior Executive & Senior Executive.

2. BSc Medical Imaging Technology

- Health profession concerned with the direct administration of radiation, primarily x-rays, in disease diagnosis and injury assessment and treatment

2. BSc Medical Imaging Technology

- Top recruiting Areas/Fields:

  - ✓ More generalized practice in medium to small hospitals.

  - ✓ Specialized clinical practice in large academic medical hospitals and trauma centers.

  - ✓ Clinics and free-standing imaging centers which may offer both special and general practice opportunities.

  - ✓ Application specialist for radiological equipment.

Courtesy to Compendium of Academic Courses After +2 - Central Board of Secondary Education India & other internet sources

2. BSc Medical Imaging Technology

SRM

- Job Positions:
  - ✓ Radiographer, Radiological Technologist, X-ray Technologist, CT scan Technologist, MRI Technologist, Mammography Technologist, Cathlab Technologist, Applications Specialist, Radiological Safety Officer, Interventional Technologist.
  - ✓ Administrative posts in Medical Imaging department & hospital.
  - ✓ Teaching & research faculty in Medical Colleges.

3. Renal Dialysis Technology

- Learn the scientific principles of various dialysis modalities and their efficient delivery.

- Learn about Acute Kidney Injury, Chronic Kidney Disease and Kidney Transplantation.

3. Renal Dialysis Technology

- Top recruiting Areas/Fields: Hemodialysis unit, Peritoneal dialysis unit, Organ Transplant, Machine marketing companies, Research etc.

- Job Positions: Dialysis Technologist, Transplant Coordinator, Dialysis unit In charge, and such.

4. BSc Critical Care Technology

- Theory and practical aspects of equipment and machinery used in ICU's such as ECG, Ventilators, ECHO etc.

- Various infusions of life saving drugs used in ICU's.

4. BSc Critical Care Technology

- Job Positions

  - Critical care Technician, Assistant to Intensivist, ICU manager and such.

- Top recruiting Areas/Fields:

  - Health consultancies, hospital ICU's, application specialist in equipment manufacturing units.

  - Multinational companies dealing with various instruments and monitors, medical coding companies etc.

5. BSc Operation Theatre & Anaesthesia Technology

- Learn about Anaesthesia equipment, Anaesthesia agents, techniques as well as dosage.

- In choosing the right anaesthetic treatment for a patient undergoing surgery.

5. BSc Operation Theatre & Anaesthesia Technology

- Top recruiting Areas/Fields:

  - Health consultancies, hospital operation theater departments, application specialist in equipment manufacturing units.

  - Multinational companies dealing with various instruments and monitors, medical coding companies etc.

- Job Positions

  - Anaesthesia Technician, Assistant to Anesthesiologist, Theatre manager and such.

6. BSc Cardiac Care Technology

- Medical specialty dealing with disorders of the heart.

- Diagnosis and treatment of congenital heart defects, coronary artery disease, heart failure.

- Apply basic and advanced life support. (BLS & ACLS)

- Use and maintain medical equipment and machines used in the field.
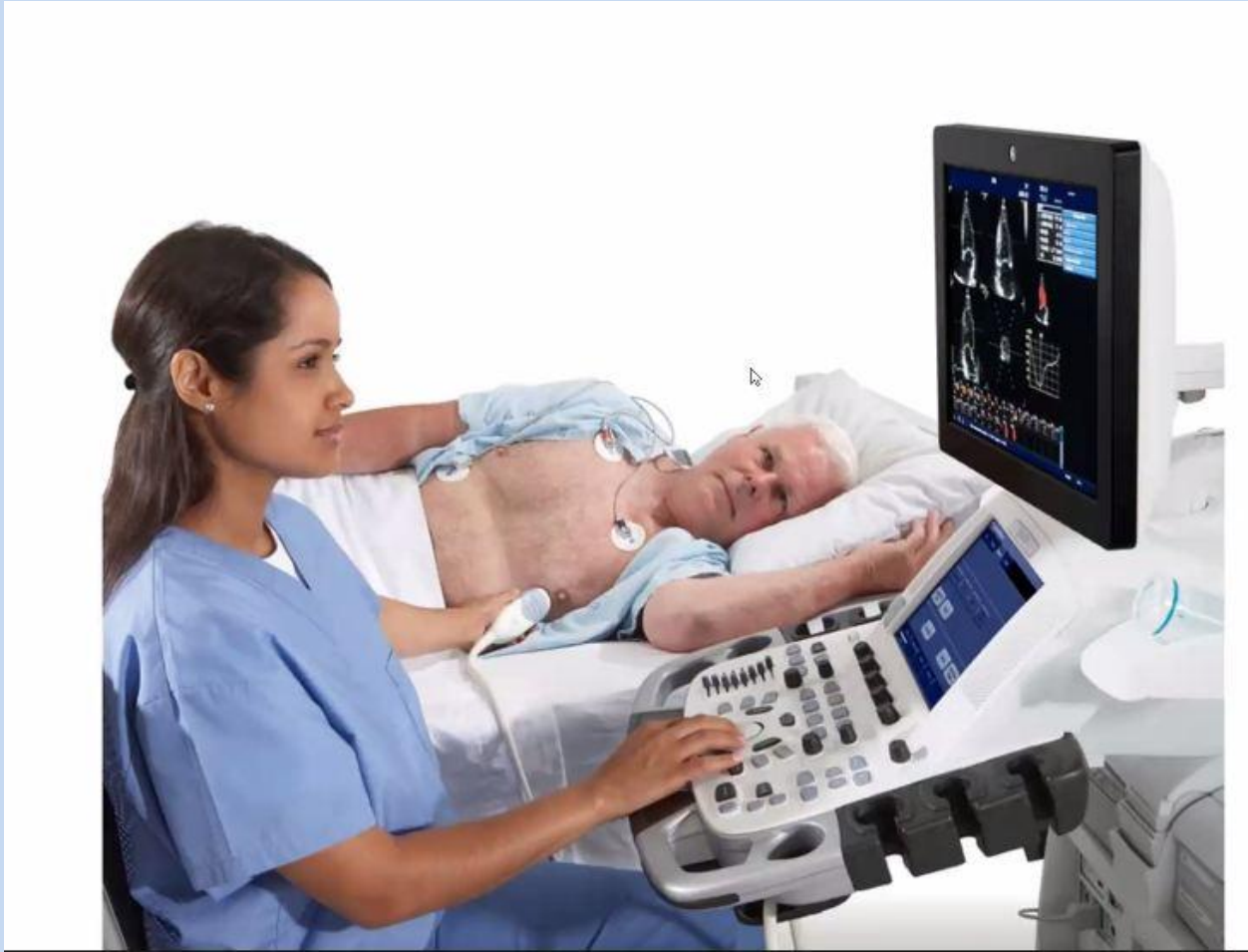
6. BSc Cardiac Care Technology

- Top recruiting Areas/Fields
  - Hospitals, Health care organizations, Health care industries, Universities.

- Job Positions
  - Cardiac technologist, ECHO technologist, Cath lab technologist, Assistant to cardiologist.

7. BSc Physician Assistant

- Top recruiting Areas/Fields
  - Hospitals , health care organizations , Health care industries , Universities.

- Job Positions
  - Assistant physician cardiology, Clinical associate, Medical assistant , making rounds and performing patient exams , assisting in surgery , diagnosing illness

8. BSc Cardio Perfusion Technology

- Study of physiology and the pathology of the lungs and the allied respiratory organs of the human body.

- The course also throws considerable light on the associated equipment that is used to support or assume the function of the lungs and the heart during surgical procedures.

8. BSc Cardio Perfusion Technology

- Top recruiting Areas/Fields
    - Cardio thoracic OT, ECMO ICU, Other Transplant units.

- Job Positions
    - Perfusionist, Senior Perfusionist, ECMO Specialist, Professor.

9. BSc Clinical Nutrition & Dietetics

- Nutritional care of patients with clinical conditions.

- Enable to discover the scientific principles that underly diet therapy.

9. BSc Clinical Nutrition & Dietetics

- Top recruiting Areas/Fields

  - International organizations, Food and Drug, Health service delivery organizations, Individual Consulting firms, Voluntary health agencies, Health clubs.

- Job Positions

  - Nutrition officer , Consultant Nutritionist ,Nutritionists/ Dieticians

9. BSc Clinical Nutrition & Dietetics

- Top recruiting Areas/Fields

  – International organizations, Food and Drug, Health service delivery organizations, Individual Consulting firms, Voluntary health agencies, Health clubs.

- Job Positions

  – Nutrition officer , Consultant Nutritionist ,Nutritionists/ Dieticians

10. BSc Medical Record Science

- Prepare the student for a professional career in Medical Records administration and management for any modern health care delivery system or care.

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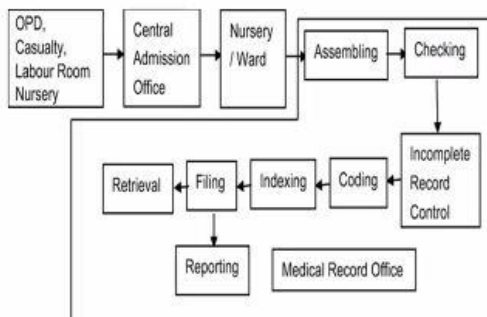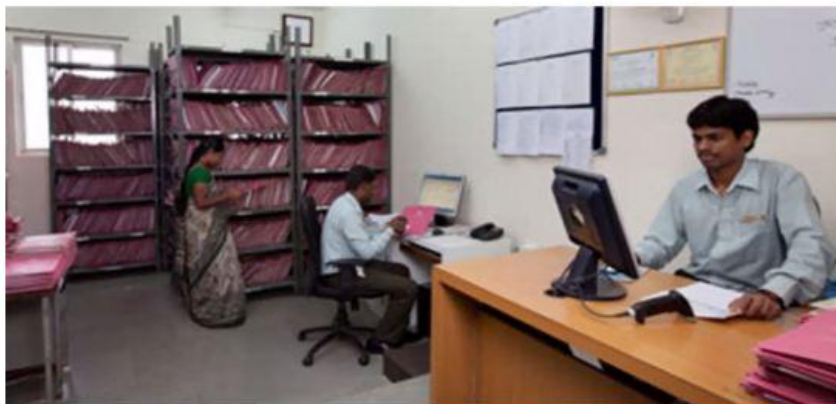
10. BSc Medical Record Science

- Top recruiting Areas/Fields

  – Medical Records Department in Hospitals, Clinics, IT companies, Medical Coding, Medical Transcription and Telemedicine.

- Job Positions

  – Medical Record Officer, Health Information Manager, Medical Coder.

11. BSc Respiratory Therapy

- Health care that involves evaluating and diagnosing patients with respiratory issues and providing treatment, management and ongoing assessments to improve breathing.

- Any patient of any age may need respiratory therapy.

- The students undertaking this course will be educated and trained to provide care to patients with various Cardiorespiratory disorders.

11. BSc Respiratory Therapy

- Top recruiting Areas/Fields

  - Adult ICUs, Paediatric and neonatal ICUs

  - Emergency department

  - Respiratory In patients & Out patients

  - Diagnostic laboratories

  - Assisting Respiratory Procedures

- Job Positions

  - Respiratory Therapists, Respiratory care educators, Consultant RTs, Teacher – Assistant Professor

12. BSc Accident & Emergency Care Technology

- Trains candidates in Emergency Medical techniques to become the first responders to all kind of medical emergencies.

- They are taught knowledge and skills to save the patients with various medical emergencies, within and outside the hospital.

12. BSc Accident & Emergency Care Technology

- Top recruiting Area/ Fields

  - Hospitals: Private and Government

  - Military Services

  - Healthcare Industries

  - Multinational Non-profit Group Organizations

  - Red Cross

13. BSc Clinical Psychology

- Aims to develop an understanding of the roles and functions of a Clinical Psychologist.

- The basics of various international classification systems used in mental health care course.

- Orientation towards the scientific, humanistic and cross-cultural understanding of the complexities of the human mind and behavior will be developed

13. BSc Clinical Psychology

- Top recruiting Areas/Fields

  - Mental Health establishments, educational institutions, research organizations and NGOs working in the field of mental health.

- Job Positions

  - Psychologist, Research associate. Mental health worker.

14. B. Optometry

- Discover the scientific principles that underpin optometry, including the properties of light, the anatomy and physiology of the eye and the processing of vision.

- Comprehensive eye examination, diagnosis of eye and vision related anomalies, and management of such diseases and/or referring them for treatment.

14. B. Optometry

- Management includes prescribing correctional lenses, eye exercises/therapy, and/or visual rehabilitation care for visually impaired.

- During the third year of the course, the students get involved in research work and are given a platform to present their work at various conferences/congress.

14. B. Optometry

- Top recruiting Areas/Fields

  – Eye Hospitals, Independent optometry clinic & optical, Multinational optical chains, Ocular Diagnostic Centers, Contact Lens & Ophthalmic Lens Industry, Health Consultancies, Companies Dealing with Eye Care Products, Professional Members in state/national level bodies etc.

- Job Positions

  – Optometrist, Vision Scientist or Researcher, Eye Care Professional, Professional Executive.

CAREER PATHWAYS

Pre-registration programme - REGISTERED OPTOMETRIST in the country of their practice

- Optometrist
- Corporate optometrist
- Independent practise
- Clinic/hospital practice
- Research institutes/industry
- Ophthalmic lens companies & CL companies- professional affairs
- Academics

CAREER PATHWAYS

- Further studies-PG, PhD, OD
- Specialisation (Contact lens practice, Binocular vision/Orthoptics, Paediatric optometry, Behavioural Optometry, Vision therapy, Geriatric optometry, Low vision, Community health optometry, Sports vision, Diagnostics)
- NGOs and Schools for the visually impaired
- Business/administration
- Entrepreneurs/innovation & creation

Overseas Universities

- Which semester? Fall (September) & winter/spring (January)
- Process of application starts 8-9months prior to start of sem
- Research on universities providing the course you like

Steps:
-Search for colleges and courses
-Contact schools and visit websites for information
-Narrow down your list of schools
-Take the entrance exams like GRE, TOEFL, IELTS
-Write SOPs and ask for LORs
-Apply to the colleges which fit your interests

Universities in USA & Canada

https://optometriceducation.org/
Association of Schools & Colleges of Optometry (ASCO)

- State University of New York, New York
- New England College of Optometry, Boston
- Michigan College of Optometry
- Southern College of Optometry, Tennessee
- Pacific University College of Optometry, Oregon
- Salus University (Pennsylvania College of Optometry)

- University of Waterloo

Australia & New Zealand

- IDP Education, Australia

https://www.ocanz.org/   **O**ptometry Council of Australia and New Zealand

- University of New South Wales (UNSW)
- University of Melbourne
- Queensland University of Technology
- Deakin University
- Flinders University

- Auckland University

15. BASLP

- Students are taught to identify, diagnose and treat patients with hearing, speech, swallowing and balance issues.

- Rehabilitation issues are also taught.

- This course is fully recognized by Rehabilitation Council of India (RCI) which is the statutory regulatory body established by an act of the parliament of India.

- The graduates are licensed to practice independently. This credential is globally accepted for further studies and for jobs abroad.

15. BASLP

- Top recruiting Areas/Fields

  - The fields that they are required, encompass Hearing assessment, selection and fitting of aids.

  - Rehabilitation of differently disabled persons, Physical treatment of balance disorders and swallowing disorders.

15. BASLP

- Job Positions

  – Audiologist & Speech therapist in hospitals, rehabilitation in India and abroad.

  – Job in the regular schools, inclusive schools and in special schools.

  – Independent practice.

16.BSc Neurosciences technology

A neuro science technologists is a multi-skilled allied health professional who performs diagnostic testing procedures including, but not limited to, electroencephalograms (E E G), evoked potentials (E P), polysomnograms (P S G), nerve conduction studies (N C S)
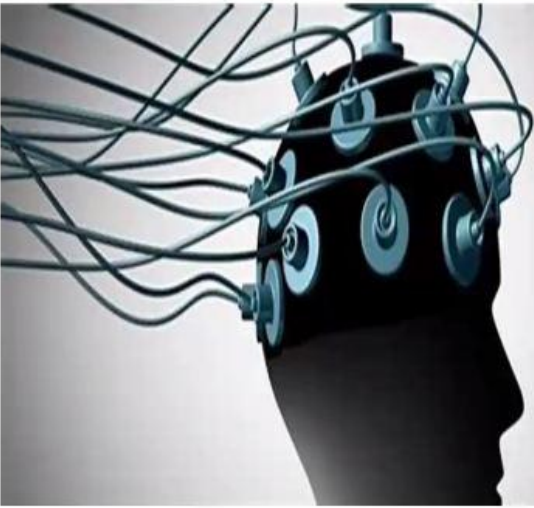
JOBS:

In industry, a BS in neuroscience prepares graduates to work in medical technology, marketing, sales engineer, and human resources. Similarly, those in healthcare can become clinical assistants and laboratory technicians.

Eligibility Criteria

- H.S.C / 10+2 or equivalent qualification with English, Physics, Chemistry, Mathematics/ Computer science/ Biology / Botany + Zoology provided the candidate has passed in each subject separately with a minimum aggregate of 50% / 60% in relevant subjects.

- Candidate must complete the age of 17 years on or before 31st December of the year of admission.