**BB- science Subjects in Detail**

**Subjects Offered in**

**UG & PG Courses**

**\*Humanities**

**\*Commerce and**

**\*Science**

**Reasons to Select**

**1. HUMANITIES,**

**2. COMMERCE**

**3. SCIENCE**

**At 10+2 Level**

**Selection of stream in Class 11th & 12th**

1. **Humanities**
2. **Commerce**
3. **Science**

**Choosing the stream after passing class 10th is a deciding factor for one’s future course of studies. It requires total dedication and concentration in studies from class 9th. Interest and capabilities of individual student in class 9th and 10th determine the selection stream in class 12th**

**HUMANITIES**

**Definition:**

Defining Humanities is a difficult task. However, it can be said in a few words that it is an academic discipline which deals with the study of ‘Human Condition’, utilizing methodologies that are usually analytical, critical or speculative.

**Employability and the skill quotient**

What one needs is a will to succeed, a perennial source of energy and unrelenting dynamism.

**It is important to be skilled, but what is equally important is to be employable.**

* One of the key requirements is a global mind set, which is about thinking big, thinking on a scale beyond what we are used to, thinking worldwide. When one is working in a global marketplace, a global mindset is indispensable. This can be achieved by developing capabilities to scan the world from broad perspective, an esthetic openness towards divergent ideas and experiences.
* Greater tolerance of other people and culture. It is important to build the capacity to rethink boundaries, to consider diversity an asset and to view uncertainty as an invigorating and natural part of the business, rather than being threatened by it.

A talent mixed with expertise in areas spanning from technology, domain (industry), business-practices usually is required by an agency for its need based employment.

The right combination of consistent good academic scores, sound knowledge of subject fundamentals, good communication and interpersonal skills can pave the way for a rewarding career.

It is important to develop behavioral skills, communication and presentation skills, dynamics, and business etiquettes, cross cultural adaptability and so on. Continuous learning, flexibility and a “can do” attitude are clear plus points in today’s environment.

**Positive attitude**

Employers love to employ those UGs/ PGS who may not have acquired niche skills, but has a positive attitude towards learning.

**1. HUMANITIES**

**Definition:**

Defining Humanities is a difficult task. However, it can be said in a few words that it is an academic discipline which deals with the study of ‘Human Condition’, utilizing methodologies that are usually analytical, critical or speculative.

**Why studying a Bachelor’s in Humanities**

* The Humanities are academic disciplines that seek to understand and interpret the human experience, from individuals to entire cultures, engaging in discovery, preservation and communication of past and present record to enable a deeper understanding of contemporary society.
* The humanities encompass literature, classics, ancient and modern languages, history, philosophy, media studies, the fine and performing arts, and other related subjects.
* It can be a challenge to show the benefits the Humanities bring. The Humanities are about what it is to be human.
* They foster social justice and equality and reveal how people have tried to make moral, spiritual and intellectual sense of the world.
* They teach empathy.
* They teach us weigh evidence skeptically and consider more than one sideof every question.
* The Humanities encourage us to think creatively.
* They teach us reason about being human and to ask questions about our world.
* The Humanities develop informed and critical citizens.
* Without the Humanities democracy will not flourish.
* The value of Humanities is more often in the questions posed than the answers found.
* Humanistic study is not formulaic.
* One only needs to turn on the news to see that we need the skills and knowledge of the Humanities in understanding other cultures, being able to communicate effectively realizing the ramifications of history and analyzing human behavior.
* Over two third of Humanities and social science graduates enter the private sector, primarily the financial and business sectors, followed by wholesaling and retailing. These sectors represent some of the fastest growing areas within the economy.
* Humanities students build skills in writing and critical reading.
* Arts indeed is a very diverse field and the students belonging to this discipline can make their career in a variety of fields including law, journalism, fashion designing, marketing, and aviation beside other courses.
* Humanities are wide field of study with extremely interesting and mind stimulating career galore.
* Wide range of subjects that come under the umbrella term Humanities range from history, languages, literature, law , philosophy, religion, performing arts, anthropology, communication, sociology, psychology and many more.
* Choosing the Humanities stream after class10 would enable a student to choose a career from a range spanning a wide area.
* Social science is a field of academics that deals with a scientific study of the human society. It is a broad category encompassing several disciplines that cannot be studied under three natural sciences such as archeology, anthropology, geography, economics, history, psychology, political science, linguistics etc.
* On average Humanities graduates have a comparable employment rate to graduates with other degrees.
* It offers a host of opportunities in various fields. Like mass-com, counseling and teaching. The main subjects opted by most CBSE class 12th Arts students are History, Pol. Sc., Sociology, Economics, Geography and Psychology etc.
* To produce committed, value-based and intellectual approach that contributes to the advancement of academics and the fields related to the practical life.
* There are a wide range of career options such as civil services, law, and research opportunities in a plethora of subjects in Humanities.

**2. Commerce**

Students wishing to choose commerce stream need to get themselves more acquainted with the subject like economics, accountancy, finance, business mathematics, book-keeping, etc. and also develop an interest in them.

**Definition**

Commerce as a stream of education can be defined as the study of trade and business activities such as the exchange of goods and services from producer to final consumer.

**Why studying a Bachelor’s in commerce**

* Commerce is a popular choice among students after passing 10th standard.
* It opens doors that lead to professional courses, which acts like foundations.
* The diversity that commerce stream offers is one of the main factors that still attract many 10th standard students.
* If anyone is good in numbers, good at analyzing and dealing with large chunks of data, have a taste in finance and economics, commerce stream will suit him.
* Students studying commerce stream have a thoughtful outlook on the outside world.
* This career has lots of difficult challenges and practical facts added to it.
* Most students opt for commerce because they want to take the next step in business and follow the strategies to become successful.
* Due to the popularity of commerce among most of students, many countries have brought up excellent career-related opportunities for the students in this stream, including India.
* The most respectable career options in this stream are Chartered Accountant and MBA position holders.
* Commerce is soon becoming a new way of modern life and setting a new direction for students to lead their life in the best possible way.
* Students wishing to choose commerce stream need to step up and start to choose commerce after 10th.
* Choose this field only if you have genuine interest in economics, accountancy and business studies.
* Students are advised to choose this field if they have an affinity for numbers and have more interest in business and economy.

**3. Science**

* Science is an important part of the foundation for education for all children.
* Science allows students to explore their world and discover new things.
* Science is the most important subject students study, because it gives them critical thinking skills they need in every subject.
* Science is a way of helping the brain grows in finding new knowledge.
* Science is important because it influences most aspects of everyday life including food, energy, medicine, transportation and many more activities.
* Science improves human life at every level, from individual comfort to global issues’
* Science knowledge allows us to develop new technologies, solve political problems and make informal decisions—both individually and collectively.
* One goal of science iss to provide natural explanations for events in the natural world.
* With science a student improves his education and communication.
* Technology is the practical science, with the use of it one can make his daily work easier.
* A school is not supposed to be a complete academic institution without science stream.
* Science is the most sought after stream among students at the 10+2 level. All CBSE schools across the country provide students with the option of choosing Science after class 10.
* Teaching the scientific method to students is teaching them how to think, learn, solve problems and make informed decisions.
* These skills are integral to every aspect of student’s education and life from school to career.
* The process and ideas of science are of great importance to everybody in three ways. The first is in their personal lives, for example, they can validly identify the components of a healthy life style.
* The second is in their civic lives, so that they take an informed part in social decisions, for example, on future options for electricity supply.
* The third is in their economic lives, where they need to be able to respond positively to change in the science-related aspects of their employment.
* If the major purpose of science education is to increase the flow of specialist scientists, technologists and engineers, then young people with special talents in science should be identified as early as possible and provided with a separate, specialized and highly focused science education.

**1. Index-- Humanities Courses**

* 1. **B. Lib.**
  2. **Cartography**
  3. **Economics**
  4. **English**
  5. **Geography**
  6. **Hindi**
  7. **History**
  8. **Home Science**
  9. **Political Science**
  10. **Psychology**
  11. **Religion**
  12. **Sanskrit**
  13. **Sociology**
  14. **Urdu**

**2. Index--B.Com. Courses**

* 1. **B.Com (Pass)**
  2. **B.Com (Hon.)**.
  3. **B. Com (Hon) vocational**
  4. **B.Com. (Management studies)**
  5. **B.Com Business Economics (Hon.)**
  6. **B.Com (Hon.) Computer Application**
  7. **B.Com (Hon.) Foreign Trade Management**
  8. **B.Com (Hon.) Taxation**
  9. **B.Com (Hon.) Banking Management**
  10. **B.Com (Hon.) Accountancy**
  11. **B.Com (Hon.) B.Sc. Economics.**
  12. **B.Sc. Economics and Management**
  13. **B.Sc. Business and Management**
  14. **Company Secretary**
  15. **B.Com (Hon.) Industrial Management**
  16. **B.Com Banking and Financial Management**
  17. **Bachelor in Accounting and Finance**
  18. **Economics (Hon.)**
  19. **B.Sc. Economics and Management**
  20. **B.Sc. Business and Management**
  21. **B.Sc. Hon. (Economics and Finance)**
  22. **Bachelor of Business Studies (BBS)**
  23. **Bachelor of Business Management (BBM)**
  24. **Chartered Accountant (CA)**

**1.1 B. Lib**

**Introduction**

* Library Science is an act of managing, maintaining and preserving information using sourses of Information Technology and Education

**Eligibility**

10+2 in any stream

**Courses and Eligibility**

* Certificate in Library Science: 10+2
* Certificate in Library and Information Science: 10+2
* Diploma in Library and information Science: 10+2
* Bachelor in Library Science (B.Lib): Bachelor’s degree in any stream
* Bachelor of Library and Information Science (BLI Sc): Bachelor’s degree in any stream
* Post Graduate in Library Science: Graduation in Library Science or BLI Sc
* PG Diploma in Library Automation and Networking: Master in Lib. Science
* Ph.D in Library and Information Science: master’s Degree in BLI Sc
* M.Phil in Library and Information Science: Master’s Degree in BLI Sc.

**Admission:**

* Merit or competition based.

**Colleges/Institution/Universities**

* University of Delhi, New Delhi
* IGNOU, Delhi
* Punjab University, Department of Library and Information Science, Chandigarh
* SRM University, SRMU, Haryana
* Osmania University, Hyderabad

**1.2 Cartograghy**

**Introduction**

* It is the art and science of making maps
* Cartographers make maps using map creation software to create an accurate and effective map.
* They do the field work for finding data points and doing research to collect useful information for creating maps.
* Skills of combining the designing, technology and geography is a favourable advantage for the subject.

**Eligibility**

* 1+2 in any discipline

**Courses**

UG and PG

**Recommended course at UG level:** bachelo’s degree at UG level and M.Sc at PG level

**Career-opportunities**

* Conservation of Art work
* Military
* Publication work
* Surveying carried out by Private and Government agencies
* Calculations and Computer Aided Drafting and many in more fields.

**Colleges/Institutions/Universities**

1. Osmania University, Hyderabad (M.Sc. in Geography)
2. Jamia Millia Islamia, Okhla, Delhi

**1.3 Economics**

**Introduction**

It is a 3-year undergraduate degree with a focus on qualitative and quantitative aspects of **Economics.** The course of study includes microeconomics and macroeconomics, statistics, history of economics, political economy etc.

**Eligibility**

10+2 with economics as a subject

**Courses**

BA Economics, Economics (Hons), PG in Economics, Research

**Institutions/colleges/universities**

* Admission in DU colleges as per the procedure of DU
* School of Distance Education, DU
* JMI
* AMU. Aligarh
* IGNOU

**1.4 English**

**Introduction**

An **English literature degree** can open a number of doors once you have graduated. A strong degree from a good University is an asset to have. Not only being a great thing for employers and job prospects but also allowing access to excellent postgraduate schemes or conversation courses.

**Eligibility**

10+2 in any stream

**Courses**

BA English (Hons), PG and Research

**Institutions/colleges/universities**

* Several colleges of DU. Admission as per the procedure of DU. Cut off percentage in DU is 98%
* JMI
* AMU, Aligarh
* IGNOU

**1.5 Geography**

**Introduction**

Importance of Geography and reasons of why one should study geography after class 10th

* It is the study of earth and its lands, features, inhabitants, and phenomena.
* Study of this subject involves the spatial analysis of natural as well as human phenomena. The study of places and regions, study of relationship between man and lands as well as the research of the earth sciences
* Geography as we know it today, encompasses a wide area of research and study. Ti seeks to understand the planet earth and everything on it, whether it is natural or human.
* Here is an outline of common concepts taught in Geography courses

1. Human Geography
2. Physical Geography
3. Globalization
4. GIS and Mapping
5. geopolitics

**Eligibility**

10+2 in any discipline with minimum 50% marks. Cut off percentage at DU is98%

**Courses**

BA, MA, and Doctoral degree

**Careers in Geography**

* Cartographer
* Environmental consultant
* Town Planner
* Geographical Information Systems officer
* Recycling officer
* Landscape architect, Teacher/Lecturer, Conservation officer etc.

**Institutions/colleges/universities**

1. Colleges of DU (2) Maharishi Dayanand University (3) AMU, Aligarh (4) IGNOU (5) School of Distant Education, DU

**1.6 Hindi**

**Introduction**

Bachelor of Arts in Hindi. This course includes the subjects like communication skills, history of Hindi literature, contemporary Hindi literature, etc. It is one of the most popular under graduate language course after BA English.

**Eligibility**

10+2 with Hindi as a compulsory subject (minimum aggregate marks)

**Course**

B.A; M.A. Ph.D.

**Admission process**

Merit based

Distance education available (IGNOU)

**FEE**

Rs. 2000/- TO Rs. 10,000

**Courses duration**

BA 3 years

**Job opportunities**

Senior customer service representative. Hindi news anchor, voice artist, Journalism and media industry, school, college, entertainment industry and many more. .

**Average salary Package**

Rs.2,00,000/- to Rs. 3,00,000

**1.7 History**

**Introduction**

* History is a chronological study of human past. It deals with research that is directed towards examining and analyzing a particular sequence of events.
* Studying history enables humans to gain better knowledge of their cultural origins. One can study the history of anything in the world for the simple reason that everything has a history and its history has influenced its current condition in several ways.
* Studying history not only enables us to analyze and study the discipline as an end in itself but also to use the subject as a means to providing preservative and a better understanding on the problems of present.
* History helps us not only to understand change and how the society we live in came to be.
* History can also be studied as an art and serves the purpose of entertainment on aesthetic grounds but also on the level of human understanding.

**Eligibility**

10+2

**Courses**

BA Hons., MA, Ph.D.

**Institutions/colleges/universities**

* DU colleges
* JMI
* AMU Aligarh
* School of Distant Education DU
* IGNOU
* Delhi College of Arts, DU.
* BHIM Rao Ambedkar College, Yamuna Vihar, Delhi

**Scope for higher studies after BA History**

A few of the areas of specialization available are;

* Agrarian Economy of Ancient, Medieval and Modern India
* American Imperialism in 19th and 20th century
* Ancient and Medieval Societies

Anyone out of History of USA or china and Japan or Canada

* British policies and princely states
* Buddhism in India
* Dalit movement in modern India
* There are so many other specialization courses in specialization in MA and other certificate courses after BA

**Career opportunities**

* Teacher after doing B.Ed or can become a lecturer after M.Phil or Ph. D
* Archivist
* Information Manager
* Librarian
* Politician
* Public Relation Officer
* Record Managers
* Probationary officer or clerks in Banks
* Work in newspaper or magazines

**Avenue of** **study of History at higher level,**

* study of historiography (study of the methods of historians in developing history as an academic discipline)
* historical research methods, study of specific periods

**Main specializations**

* Archaeology
* Museology: the science or practice of organizing, arranging and managing museums.
* Archival studies. Most of these courses are offered at PG level. Students specialize in particular object of study and become experts in coin (numismatist), weapon sculpture, deciphering of inscriptions (epigraphist*).*

**Employment:**

* Archaeologists employed by ASI for about 3600 monuments, museums Research institutes.

**1.8 Home Science**

**Introduction**

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

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

**Eligibility**

10+2 in any stream for BA Home Science

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

**Courses**

BA and B.Sc.

**Institutions/colleges/universities**

Different Colleges of DU

JMI

AMU, Aligarh

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

**Specialization**

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

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

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

**Main Branch**

**Food and nutrition**

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

**Home Science**

**Home Science in daily life**

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

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

**1.9 Political Science**

**Introduction**

Political science is an important subject in the Humanities stream and it shows up many challenging careers. Some of the reasons for studying Political-science are listed below.

* It is a social science that deals with the study of the theory and practice of Politics as well as the description and analysis of political systems and political behavior.
* Knowledge of political science enables us to study issues concerning the allocation and transfer of power in decision making roles and systems of governance including governments and international organizations as well as political behavior and public policies.
* Experts in the field are able to measure the success of governance and specific policies by examining various factors, including stability, justice, material wealth and peace.
* Studying the subject helps us in learning how groups of people govern themselves, how policies are made, and how we can improve our government policies at the local, state, national and international levels.

**Eligibility**

10+2 in any stream

**Courses**

BA Political Science, MA, M.Phil, Ph.D.

**Institutions/colleges/universities**

* Kamala Nehru College, DU
* School of Distant Education, DU
* IGNOU
* JMI
* AMU

**Employment areas**

* Teacher in school and colleges, Govt. agencies, Public Relation Departments etc.

**1.10 Psychology**

**Introduction**

* Psychology is the scientific study of mind and behavior. It is a multifaceted discipline and includes many sub fields of study such areas as human development, sports, health, clinical and social behavior and cognitive processes.
* Its origin can be traced back to ancient Greece, 400—500 years BC.
* The emphasis was a philosophical one, with great thinkers such as Socrates influencing Plato, who in tern influenced Aristotle.
* Philosophers used to discussed many topics now studied in modern Psychology, such as memory, free will, attraction etc.
* Wundt, an American Psychologist separated psychology from philosophy by analyzing the working of the mind using more objective and standardized procedures.
* Psychology is a science which attempts to investigate the causes of behavior using systematic and objective procedures for observation, measurement and analysis, backed-up by theoretical interpretations, generalizations, explanations and predictions.
* This course offers students an engaging introduction to the essential topics in psychology.
* Throughout this study of human behavior and mind, the student will gain insight into the history of the field of the psychology, as well explore current theories and issues in areas such as cognition, motivation and wellness.

**Eligibility**

* 10+2 in any stream

**Career in Psychology**

* **Psychiatrist:** must first earn a Bachelor’s degree, then complete a Medical degree. Psychiatrists are Medical doctors who specialize in diagnosing and treating mental illness and disorders.
* **Industrial-organizational Psychologist:** most professionals in this field hold a doctorate in industrial organizational psychology, and job opportunities and salaries are more abundant for those who have completed this level of education. However there are some jobs are available to those who hold a Master’s degree.
* **Neuropsychologist:** Education required, Doctorate degree in neuropsychology or clinical neuropsychology
* **Engineering Psychologist:** There are some early-level jobs available to psychologists with master’s degree, but those with doctorate degree will have a much easier time finding jobs and will earn higher salaries.
* **Psychology teacher:** post secondary psychology teachers must have earned a master’s degree or doctoral degree. High school psychology teachers need at least a bachelor’s degree.
* **Clinical Psychologist**
* **School counselor:** for those who prefer teaching or working in the educational setting, educational psychology, and school psychology and school counseling are the options to choose from. These positions are concerned on the overall mental welfare of the school’s employees and students.

**Duties of school counselor**

1. Help students understand and overcome social or behavioral problems through individual or group counseling
2. Provide individual and small group counseling based students’ need.
3. Work with students to develop skills, such as organization, time management and effective study habits.
4. Help students set realistic academic and career goals and develop a plan to achieve them.
5. Evaluate students’ abilities and interests through aptitude assisments, interviews and individual planning.
6. Collaborate with teachers, administrators, and parents to help students succeed.
7. Deliver classroom guidance lessons on topics, such as bullying, drug abuse and planning for college or careers after 10th and then graduation.
8. Identify and report possible cases of neglect or abuse.
9. Refer students and parents to resources outside the school for additional support.
10. The specific duties of school counselors vary with the ages of students they work with.

* **Career counseling:**

1. Career counselors are usually employed in academic settings, aiding students in building future educational or career paths.
2. Career counselors assist people with the process of making career decisions, by helping them choose a career or educational program.
3. Career counselors work with clients at various stages in their careers.
4. Some work in colleges to help students choose a major career. They also help students determine what jobs they are qualified for with their degrees.
5. These counselors also work with people who have already entered the work force.
6. Career counselors develop plans to improve their client’s current career and provide advice about entering a new profession.
7. Some career counselors work in private practice.

* **Sports psychologist:** the sports’ psychologist is concerned on the effects of physical activity to the psychological health and performance of athletes. These psychologists work on the academic level and serve as consultants for sports teams. Sports psychologists work along with training coaches in developing rehabilitation and team building programs. They also provide counseling to athletes who undergo career transitions.
* **Marriage and family therapis**t: a popular career in the clinical setting is becoming a marriage and family therapist (MFT). This requires masters in science or arts and thousands of intern hours. They occasionally work in hospital settings besides psychiatrists and social workers, while other times in their own private practices. The focus is facilitating behavioral changes in the marriage and the family sphere.
* **Counseling Psychology:**
* it is a type of applied psychology that can be used to help people gain control of their feelings.
* It focuses on treating individuals with a variety of different emotional, t
* Counseling psychology is one of the most common and widespread psychological specialties.

**1.11 Religion**

**Introduction**

* The academic subject of Religion focuses on religion beliefs, behaviours and Institutions
* In this field professionals describe, compare, innterprate and explain religion on historically based facts and events and cross-culture perspectives
* Religious tries to study religious behavior and belief from outside, and from other view point
* There are various courses which specializes in reigion
* A variety of courses which are offered by various universities/Colleges/Institution in India.

**Eligibility**

10+2 in any discipline. It may differ from institution to institution

**Courses**

1. BA and MA in Islamic Studies
2. BA in Christian Studies
3. BA in Jain and Buddhist Studies
4. MA in Comparative studies of different religions
5. Ma & M.Phil in Guru Garanth Sahib
6. PG Diploma in Comparative Study of World Religions and Spirituality

**Employment Area**

* Teaching and Education
* Historian
* Psychologist
* Advisor
* Preacher
* Translator
* Certified Tourist Guide
* Field of Sociology
* Counselor
* Religious person in Indian Army

**Colleges/Institutions/Universities**

* AMU, Aligarh
* Nalanda University
* University of Mumbai
* Aliah University
* Banaras Hindu University and other ainstitutions

**1.12 Sanskrit**

**Introduction**

Sanskrit is one of the oldest languages in India. It is for those candidates who want to proficient in this language. Subjects covered in this course are drama, prose, poetry, novels, literary criticism, fiction, society grammar, literary history, etc.

It covers the study of topics such as Kavya Literature and Applied grammar, Literature in Sanskrit language, methodology of Sanskrit, Vedic literature, cultural heritage of India, communication in the language, Astika Darsanas, poetics etc.

Candidates who have good knowledge of Sanskrit and want to become teacher/lecturer in this language are most suitable one for this program. Those who want to become Pandits are also suitable for the program.

**Eligibility**

10+2 with Sanskrit as one of the subjects, (minimum 45% marks)

**Courses**

B.A., M.A, Ph.D.

**Colleges/Institutions**

Miranda House--Delhi, Christian College--Chennai, Scotish College--Kolkata, Maulana Azad College--Kolkata. Ranchi University--Ranchi etc

**1.13 Sociology**

**Introduction**

* it is the study of the development, structure, and functioning of human society.
* The study of social problems.
* Common skills gained from a Sociology degree include; Planning and project management. Data analysis including competent/advanced use of statistics. General IT skills, self management including planning and meeting deadlines.
* A degree in Sociology can qualify you for a career in Human Service Administration, counseling, journalism, public office, law enforcement, corrections, social work or education and many more evanues of the subject.

**Eligibility**

10+2 in any stream

**Courses**

BA in Sociology

**Institutions/Colleges/Universities**

* Kamala Nehru College Delhi
* JMI
* AMU
* School of Distant Education, DU
* IGNOU

**Employment Areas**

* Corporate Research Firms
* Communication Industries
* Criminal Justice Field
* Educational Institutions
* Labour Unions
* Prisons
* Social Work Department
* Trade Association
* Social Worker
* Marriage Counselor etc.

**1.14 Urdu**

**Introduction**

* BA Urdu is an undergraduate Urdu language course.
* It covers the areas regarding Urdu literature, prose, poetry, drama, novels and grammar etc.

**Eligibility**

12+2 in any stream, Urdu as a subject or additional subject

**Courses**

BA Hon, MA

**Institutions/Colleges/Universities**

A number of colleges of DU offer degree course in the subject. Admission as per the criterion of DU.

JMI

AMU

**BB--Science subjects in detail**

**What after passing Senior Secondary (12th class)**

Students after passing the 12th class face a crucial juncture to select a specific course from among the variety of courses available in their discipline they choose, especially in science that offer a plethora of courses for their career prospects and job opportunities associated with these subjects. Subjects offered by **Government Institutions** are limited and fierce competitions stand as a barrier to cross in order to fulfill the wish to get a seat there in the subject of choice. What remains is the alternate option to look for the admission in **Private Institutions.** But it carries a price tag with it of varied amounts as per the value of the course and value and standard of the institution that offers the course. This mix up is bound to raises a confusion equally among the students and their parents. The courses available in different disciplines are being put together for a look at a glance with a little bit of detail for the listed subjects of choice in an endeavor to reduce the confusion to select an appropriate course.

**Students who are successful in class 12th with science (PCB) are eligible to the Certificate, Diploma and Degree courses:**

1. **Diploma courses**
2. **Bachelor’s degree course**

**(A) Certificate courses**

1. **Certificate in Dental Assistant**
2. **Certificate in ECG and CT Scan Technology**
3. **Certificate in Nursing Care Assistant**
4. **Certificate in Physio-therapy**
5. **Certificate—Technician /lab Assistant**
6. **Certificate in Ultrasound Technology**
7. **Certificate in Veterinary Pharmacy**
8. **Certificate in X-ray-Technology**
9. **Certificate in Yoga Naturopathy**

**(B) Diploma Paramedical Courses**

1. **Cardio Care Technician, 2-years.To Diploma**
2. **Diploma in Dental Hygyien**
3. **Diploma in Dental Lab Technology**
4. **Diploma in Dialysis Therapy**
5. **Diploma in Invasive Cardio Vascular tech. 2-years**
6. **Diploma in Medical Lab Technician**

**Introduction**

* A biomedical engineering/equipment technician/technologist or biomedical engineering/equipment specialist is typically an electro-mechenical technician or technologist who ensures that medical equipment is well-maintained, properly configured, and safely functional.

1. **Diploma in Medical laboratory Technology**
2. **Diploma in General Nursing and Midwifery (GNM-Nursing)**
3. **Diploma in Occupational Therapy**
4. **Diploma in Operation Theate Technology**
5. **Ophthalmic Technician**
6. **Diploma in OT Technician**
7. **Diploma in Pharmacy**
8. **Diploma in Physio Therapy**
9. **Diploma in Radio Imaging Technology … 2 years**
10. **Diploma in Rura Healthcare**
11. **X-ray & MRI Technician**
12. **Trade Diploma in Hotel Management (TDHM)**
13. **Travel and Tourism Management (12 months)**

**Duration: 1-3 years**

**Diploma courses**

**Cardio Care Technician, 2-years.To Diploma**

**Introduction**

Cardiac Care Technician is a healthcare specialist who supports Cardiologist in diagnosing and treatment of ailments of the human heart. The job requires to work as a part of a multidisciplinary team and should demonstrate motivation and an innovative approach. It requires good organizational and time management skills. Knowledge of human anatomy and physiology specifically related to cardio vascular system is essential. Those involved in the job require assisting in performing invasive and non-invasive diagnostic examinations and therapeutic interventions of the heart and/or blood vessels at the request or direction of the provider.

Cardiovascular Technologists are responsible for preparing the patients for open heart surgeries and pacemaker implementation surgeries. It is extremely rewarding, well paid and in demand healthcare field.

**Courses**

1. 2-years certificate course
2. B. Sc, M. Sc and Ph. D

**Eligibility**

10+2 with PCB and English as core subjects. Some of the colleges institute an entrance examination followed by personal interview to choose the best students.

**Colleges/Institutions/Universities**

* MAHE, Manipal, merit based selection
* KMC, Mangalore, merit based selection
* MMU, Ambala, merit based selection
* Sushant School of Healthcare. Gurgaon
* Galgotia University, Greater Noida
* School of Allied Health, Greater Noida
* Institute of Public Health. Mahipalpur, Delhi.

* 1. **Diploma in General Nursing and Midwifery (GNM-Nursing)**

**Introduction**

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

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

**Eligibility: 10+2 Science**

**Institutions/Colleges/universities**

* Malwa College of Nursing, Kotkapura, Punjab
* AIIMS, Delhi
* AFMC, Pune.
* Govt. Medical College Amritsar.
* NIMS University, Jaipur.
* Pt. Bhagwat Dayal Sharma Postgraduate Institute of Medical Science. Rohtak
* Many more Colleges in different States

**3. UG Science and Allied Courses**

**3. B. Sc. Courses**

* 1. **Bachelor of Environmental Science**

**Introduction**

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

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

**Eligibility**

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

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

**Admission Process**

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

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

**Courses**

B.Sc. M.Sc.

**Course fee**

Rs.20,000-Rs 50,000.

**Career options and job prospects**

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

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

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

**Colleges/Institutions**

There are 50 environmental colleges in India.

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

* 1. **Bachelor of Hospital Management**

**Introduction**

Hospital Management is related to various aspects such as purchase of equipment, human resource, and promotion of health services, economic planning, and budget allocation for hospital services.

**Eligibility**

1. XII pass or equivalent with Biology.
2. For some institutes an MBBS degree is the criteria for admission and for certain courses a Bachelor's degree (Any stream) is required.
3. Eligibility criteria may vary for different colleges.

**Courses**

1. Bachelor of Hospital Management (BHA)
2. Master of Hospital Management (MHA)
3. M.Phil. – Hospital & Health Management systems
4. Ph. D. programme in Health Services Management

**Institutes**/**Universities**

1. Tata Institute of Social Sciences, Osmanabad, Maharashtra.
2. Birla Institute of Technology and Science, Pilani, Rajasthan.
3. All India Institute of Medical Sciences, New Delhi
4. Punjab University, Chandigarh
5. Tata Institute of Social Sciences, Dept. of Health Services. Mumbai
6. Armed Forces Medical College in Pune
7. Devi Ahilya Vishwavidyalaya, Indore
8. Nizam Institute of Medical Science in Hyderabad
9. Kasturba Medical College Manipal.
10. Sher-i-Kashmir Institute of Higher Medical Sciences, Jammu and Kashmir
11. Madurai Kamaraj University, Madurai
12. Indian Institute of Social Welfare and Management, Kolkata
13. Distance Education
14. Institute of Health Care Administration, Chennai.
15. Note: There are many other institutes which offer correspondence course in Hospital

Management.

* 1. **Bachelor of Pharmacy (B. Pharma)**

**Introduction**

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

**Eligibility**

* 10+2 with PCB

**Courses**

* UG, PG & Research

**Institutions/colleges/universities**

* Admission through JEE/NEET
  1. **B.Sc. Agriculture**

**Introduction**

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

**Eligibility**

* 10+2with science (PCB/PCM)

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

**Colleges**

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

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

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

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

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

**Introduction**

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

**Eligibility**

* 10+2 in Science for B.Sc.

**Courses**

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

**Institutions/colleges/universities**

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

**Employability**

* M.Sc. for getting a Job
* Ph.D. for work as an advisor for any International agency
  1. **B.Sc. Bio-chemistry**

**Introduction**

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

**Eligibility**

10+2 with PCB

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

**Courses**

B.Sc. Hon, M.Sc.

**Institutions/colleges/universities**

* DU
* JMI
* AMU
* And other private colleges.

**3.7 B.Sc. (Hon) Botany**

**Introduction**

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

**Eligibility**

10+2 with PCB

**Jobs available**

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

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

**Institutions/colleges/universities**

* DU colleges, admission strictly on merit
* JMI

**3.8 B. Sc. (Hon) Chemistry**

**Introduction**

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

**Eligibility**

10+2 with PCB

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

**Courses**

B.Sc. Hon, M.Sc.

**Institutions/colleges/universities**

* DU
* JMI
* AMU
* And other private colleges.

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

**Introduction**

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

**Eligibility**

10+2 in any stream

**Duration:** 3-years

**Courses**

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

**Institutes/colleges/universities**

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

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

* 1. **B.Sc. Fisheries Science (B.F.Sc)**

**Introduction**

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

**Duration**

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

**Eligibility**

* 10+2 in science stream (PCB)

**Institutes**

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

**Career growth in Fisheries**

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

**Central government**

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

**National Banks**

* Field Officer or even Manager in Agriculture Loan Section

**Private Sector**

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

**Foreign Jobs**

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

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

* 1. **B.Sc. Food Quality Assurance**

**Introduction**

it is the study of all the technical aspects of food. It combines disciplines like micro-biology, bio-chemistry, and chemical engineering.

**Eligibility**

10+2 with Science with a minimum aggerigate of 70%. Some of the reputed Institutions conduct entrance examination.

**Courses**

* B.Sc. (food processing technology, food technology, food processing technology, micro-biology and food technology),
* M.Sc, B.E. Food Technology and Bio-chemical Engineering,
* B.Tech (food science, food technology,)
* M.A. (food nutrition)
* M.E & M.Tech.

**Colleges/Institutes**

1. M.O.P. Vaishnav College Gr Women, Chennai (private)
2. Coiiege of Engineering, Andhra University, Vishkhapatnam (private)
3. S.N.D.T. College of Home Science, Puune (private)
4. Sri Sathya Sai Institute of Higher Learning, Anantpur
5. Raghunath Girls College, Meerut
6. Sharda University, Greater Noida
7. IIS University-International College for Girls, Jaipur
   1. **B.Sc. Forestry**

**Introduction**

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

**Duration of the course**

* 4 yers.

**Fee**

* 30,000/year

**Eligibility**

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

**Courses**

* UG, PG and Ph.D.

**Career options nd Job Prospects**

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

**Popular Forestry Employment Areas**

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

**Listed below are suitable jobs**

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

**Institutes/colleges/universities**.

* Doon School Group.
* Vishwakarma University, pune.

**3.13 B.Sc. General**

**Introduction**

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

**Eligibility**

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

Other Universities do conduct entrance test

**Courses**

B.sc with PCM and PCB

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

**Introduction**

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

**Eligibility**

* 10+2 with science

**Courses**

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

**Employment areas**

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

**Institutes/Colleges/universities**

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

**Introduction**

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

**Eligibility**

10+2 in Science

**Duration of Course:** 3 years

**Courses**

UG, PG and Research

**Job prospects**

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

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

**Jobs Available**

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

**Introduction**

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

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

**Eligibility**

10+2 in any stream for BA Home Science

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

**Courses**

BA and B.Sc.

**Institutions/colleges/universities**

Different Colleges of DU

JMI

AMU, Aligarh

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

**Specialization**

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

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

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

**Main Branch**

**Food and nutrition**

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

**Home Science in daily life**

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

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

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

**Introduction**

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

**Eligibility**

10+2 in science stream (PCB)

Register for state level entrance test

**Courses**

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

**Job opportunities in Govt. Sector**

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

**Job opportunities in private Sector**

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

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

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

**Introduction**

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

**Eligibility**

* 10+2 science

**Scope of the subject**

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

**Courses**

* UG, PG and Ph.D.

**Colleges**

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

**Introduction**

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

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

**Areas of study in mathematics**

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

**Applied mathematics**

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

**Eligibility**

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

**Courses**

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

**Institutes/colleges/universities**

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

**7 countries that have smart mathematics students**

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

**Introduction**

* Microbiology is the study of microorganisms, which are microscopic, unicellular, and cell-cluster.
* This includes eukaryotes such as fungi and prokaryotes
* Viruses though not classified as living organisms are also studied in Microbiology.
* It typically includes the study of the immune system or immunology.
* Main focus of this program is study of the pathogenic potential of the disease-causing organisms in man.
* It is professional degree program meant to prepare students for a prosperous career in the field of Microbiology.

**Eligibility**

* 10+2 science (PCB)

**Duration**

* 3 years

**Courses**

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

**Employment Areas**

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

**Job Type**

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

**Colleges**

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

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

**Introduction**

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

**Eligibility**

* 12+2 Science (PCB)

**Duration**

* 3 years

**Courses**

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

**Institutions/colleges/universities**

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

**Introduction**

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

**Eligibility**

* 10+2 science

**Courses**

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

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

**Employment Areas**

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

**Colleges/institutions/universities**

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

* 1. **B.Sc. Nursing**

**Introduction**

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

**Eligibility:** 10+2 Science

**Duration**: 3-year degree course

**Courses**

1. Diploma in General Nursing and Mid-wifery
2. B. Sc. Nursing
3. M.Sc. Nursing

**Institutions/Colleges/Universities**

1. AIIMS, Delhi
2. AFMC, Pune
3. Hamdard College of Pharmacy, Tughlaqabad, Delhi
4. Lady Harding Medical College, Delhi
5. Guru Gobind Singh Indraprastha University, Delhi
6. DY Patil University, Navi Mmbai
   1. **B. Sc. (Hon) Physics**

**Introduction**

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

**Eligibility**

12+2

**Institutions/colleges/universities**

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

**Introduction**

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

**Eligibility**

10+2 with Math as one of the subjects

**Job opportunities**

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

**Courses**

B.Sc. M.Sc.

**Colleges/universities**

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

**Average fee**

* Rs. 50,000 per year.

**After UG**

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

**Introduction**

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

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

**Eligibility**

10+2 in PCB

**Courses**

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

**Institutions/colleges/universities**

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

**Introduction**

Veterinary Science is a subject related to the treatment of different animals from domestic pets to farmyard animals. The course content mixes a group of topics like anatomy, animal behaviour, animal husbandry, cell biology, nutrition, physiology, genetics, epidemiology, pharmacology, infectious diseases, pathology and parasitology.

**Course**

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

**Eligibility**

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

**Institutes/Universities**

* Indian Veterinary Research Institute, Uttar Pradesh
* College of Veterinary Sciences, CCS Haryana Agricultural University, Hisar, Haryana
* Bombay Veterinary Science College, Mumbai
* College of Veterinary Science & Animal Husbandry (Anand Agricultural University), Anand, Gujarat
* Chandra Shekhar Azad University of Agriculture and Technology, Kanpur, Uttar Pradesh.
* Jawharlal Nehru Krishi Vishwavidyalaya, Jabalpur
* Post Graduate Institute of Veterinary & Animal Sciences (PGIVAS), Akola

**3B B. Sc. Paramedical & Allied Sciences**

* 1. **B.Sc. Anesthesia Technology**

**Introduction**

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

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

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

**Eligibility**

10+2 with PCB WITH AT LEAST 50% MARKS

**Career in Anesthesia**

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

**Courses**

B.Sc. M.Sc.

**Institutions/Universities**

Some of the top institutes

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

**Introduction**

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

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

**Eligibility**

10+2 (PCB & PCM)

**Courses**

B.Sc. BASLP

**Course duration**

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

**Institutions/Universities**

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

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

**Introduction**

* The course is designed to equip the students with planning, designing and fabrication of intra-oral appliances.
* It is designed to educate them with laboratory experience to provide service to the patients with oral and dental issues.
* It involves fabricating crowns and bridges, dentures, maxillofacial and orthodontist appliences to be used by a patient.
* The procedures are learned with computer aided design and production methods. Students are trained in CAD (Computer Aided Design—a software). The job helps in solving the complicated problems.

**Courses**

**Eligibility**

10+2 with PCB. Students should have an interest in studying the the oral hygiene and dental aspects.

Higher studies and research area

**Job Opportunities**

There are a number of opportunities for the qualified students in

* Dental clinics & hospitals
* Prosthetic manufacturing factories
* Dental laboratories
* Research sector
* Self employment etc

**Colleges/universities**

* King George’s Medical University, Lucknow
* Tamilnadu Government Dental College and Hospital, Chennai.
* Dr. Ziauddin Ahmed Dental College, Aligarh
* Amrita School of Dentistry, Kochi, Kerala
* Maharishi arkandeshwar College of Dental Science and Research, Ambala, Haryana
* Patna Dental college & Hospital, Patna
* HP Government Dental College & hospital, Shimla, Himachal Pradesh and many more
* Jaipur Dental College, Jaipur

**Fee**

Rs.50,000--60,000 PA

* 1. **Bachelor of Pharmacy (B. Pharma)**

**Introduction**

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

**Eligibility**

* 10+2 with PCB

**Courses**

* UG, PG & Research

**Institutions/colleges/universities**

* Admission through JEE/NEET
  1. **Bachelor of Physiotherapy**

**Introduction**

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

**Eligibility**

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

**Courses**

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

**Duration**

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

**Employment Areas**

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

**Job Profiles**

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

**Institutions/Colleges/Universities**

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

**Introduction**

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

**Eligibility**

* 10+2 with science stream (PCB).
* Minimum marks—50%
* Admission either through JEE or any other entrance test
* B. Tech. entrance test conducted by Institute or through National level entrance test

**Courses**

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

**Career Scope**

It is an emerging field of science and career prospects in this field are rapidly growing.

**Institutions/colleges/universities**

* 1. Maulana Azad National Institute of Technology, Bhopal
  2. Amity University, Noida
  3. JIS Institute of Advanced Studies & Research, Salt Lake City, Kolkata
  4. Lovely Professional University, Connaugt Place, Delhi and others

* 1. **B.Sc. Bio-medical Science.**

**Introduction**

* It encompasses a biological, medical and health related disciplines.
* It deals with challenges which the world population is facing such as obesity, neurological diseases cancer, cardiovascular diseases etc.
* It focuses on the disciplines of anatomy, physiology, bio-chemistry, neuroscience and and certain other para-medical disciplines such as micro-biology, pathology, pharmacology etc. these disciplines help in clinical diagnosis and treatment of diseases.
* There are three general areas of specialty in the discipline, **life-sciences, physiological sciences and bio-engineering.**
* The broadness of the discipline gives graate many opportunities to specialize and thus offers many career options.
* It enables us to grow embryos for IVF, 3D printing a heart, or finding a new medicine to fight cancer.

**Eligibility**

10+2 (PCB), student must have studied Mathematics till class 10th

**Courses**

* Graduation
* Post Graduation and Research

**Colleges/Institutions**

1. St.Stephen’s College, Delhi
2. Acharya Narendra Dev Medical ollege, DU, Delhi
3. Bhaskarachaya College of applied Sciences,DU, Delhi
4. Bundelkhand University, UP.
5. RamnaraRuia ollege, Mumbai
6. Madras Christian College, Chennai
7. St.Francis College for women, Hydrabad
8. AIIMS, NewDelhi
9. Kasturba Medical College (KMC), Karnataka
10. Armed Force Medical College (AFMC), Pune, Maharashtra
    1. **B.Sc. Bio-technology**

**Introduction**

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

**Genetic Engineering**

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

**Plant Tissue Culture**

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

**Plant Genetics**

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

**Eligibility & Courses**

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

**All India Biotechnology Entrance Examination**

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

**Education Abroad**

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

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

**Certificate Course—cardiac Care Technician**

**Introduction:** Cardiac Care Technician is a healthcare specialist who supports Cardiologist in diagnosing and treatment of ailments of the human heart. The job requires to work as a part of a multidisciplinary team and should demonstrate motivation and an innovative approach. It requires good organizational and time management skills. Knowledge of human anatomy and physiology specifically related to cardio vascular system is essential. Those involved in the job are required to assist in performing invasive and non-invasive diagnostic examinations and therapeutic interventions of the heart and/or blood vessels at the request or direction of the provider.

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

It is a 2-year certificate course after 10+2

**Cardiovascular Technologists**

**Introduction:** Cardiovascular Technologists are responsible for preparing the patients for open heart surgeries and pacemaker implementation surgeries. It is extremely rewarding, well paid and in demand healthcare field.

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

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

**Courses**

* 1. Certificate Course—2 years
  2. UG—3 years
  3. M.Sc and Ph.D

**Eligibility**

10+2 with PCB and English as a core subjects. Some of the colleges institute an entrance examination followed by personal interview to choose the best students.

**Colleges/Institutions/Universities**

**Admission process in UG Course**

Entrance test, counseling after qualifying the entrance examination.

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

**Job avenues**

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

**Institutions/Colleges/university**

* Rajiv Gandhi Para medical Institute, Delhi, 10,000.
* Christian medical college, Vellore, (Fee- I,13,000 per year).
* Geetanjali University, Udaipur, (70,000 per year).
* MAHE, Manipal, merit based selection
* KMC, Mangalore, merit based selection
* MMU, Ambala, merit based selection
* Sushant School of Healthcare. Gurgaon
* Galgotia University, Greater Noida
* School of Allied Health, Greater Noida
* Institute of Public Health. Mahipalpur, Delhi.
  1. **B.Sc. Cardio Vascular Technology**

**Introduction**

* Cardiovascular technology deals with diagnosing and monitoring diseases related to the heart and the circulatory system.
* In this program students are introduced with various complex procedures such as performing stent implant, setting up cardiac pacemakers and defibrillators in the treatment of heart disease.
* Cardiovascular technician extend a hand of help to the physician in treating the heart diseases.

**Eligibility**

* 10+2 (PCB—English as one of the primary subjects) with a least 50% marks. Admission through entrance test or on the basis of qualifying examination.
* Those who have passed 2-year diploma in Cardiac Care Technology are eligible for admission.

**Duration**

3+1 year—compulsory internship

**Job opportunities**

Degree holders may find the job at various sectors such as hospital, university, health organizations. They are capable to work as cardiovascular technician, medica-sonographer etc.

**Courses**

Certificate course, B.Sc. M.Sc., MBA, PGDM

**Institutions/Colleges/Uiversities**

1. MAHE Manipal—merit-based admission.
2. KMC, Mangalore—merit-based admission
3. MMU, Ambala—merit-based admission
4. SU, College—Noida- merit-based admission
5. Galgotias Universities, Noida—merit-based admission
6. Government Medical College, Kozhikode—merit-based
   1. **B. Sc. Clinical pathology**

**Introduction**

Clinical pathology is a medical specialty that is concerned with the diagnosis of the disease based on the laboratory analysis of bodily fluids, such as blood, urine and tissues homogenates or extracts using the tools of chemistry, microbiology, hematology, and molecular pathology. It helps in diagnosis of the disease and covers many lab functions. Clinical pathologists are healthcare providers with special training. Special divisions of a pathology lab include blood bank clinical chemistry and biology, toxicology, heamatology, immunology and serology, micro-biology etc. maintenance of information system, research and quality control are its concerned departments.

A clinical pathologist is used to be the in charge of a blood bank in a hospital. His responsibilities include the collection and processing of blood and blood products. The branches of pathology include anatomical pathology, cytopathology, histopathology, forensic pathology and molecular pathology.

**Courses**

Diploma, graduation, post graduation (M. Sc, MD) and research. NEET is compulsory for MD pathology

**Eligibility**

10+2 with PCB

**Institutions/Colleges/Universities**

1. KPC Medical college and Hospital, Jadavpur
2. Medical college, Kolkata
3. Jagannath Gupta Institute of Medical Sciences and Hospital, Kolkata
4. Calcutta National Medical college, Kolkata
5. Jamia Hamdard, Delhi
6. Aditya Institute of Technology, Delhi
7. Baba Sahib Ambedkar Technical Education Society, New Delhi.
8. Holy Family Hospital, New Delhi
9. Integrated Institute of Technology, Dwarka, Delhi
10. Techware Institute of Technology, New Delhi
11. Assam Medical College, Dibrogarh
12. Indira Gandhi Medical College, Shimla
    1. **B.Sc. Critical Care Technology**

**Introduction**

* It is a undergraduate course in which students learn about theoretical and practical aspect of equipment and machinery used in Intensive Care Units such as ***Electrocardiogram (ECG), Echo cardiology, computerized Treadmill Test (TMT), Intra Aortic Balloon Pump (IABP), Extra Corporal Membrane Oxygenation(ECMO), and many others.***
* Apart from this students also learn about Operation Theatre Technology and Critical Care.
* After completion of B.Sc. in Critical Care-Technology, students are well equipped to work in the Critical Care Unit., Cardiac Unit, and Operation Theatre etc.

**Eligibility and more**

* 10+2 (PCB with Mathematic), at least 50% marks
* Duration—3to4 years
* Selection process—Merit based/Entrance Exam
* Course fee—Rs. 6,000 to 3,00,000 PA
* Average Salary—3 lacks to 16 lacks PA
* Job profile—Critical Care Technician, Intensive Care Unit, Technologist, emergency medicine Physician, CAT Technician, Dialysis Assistant.

**Courses**

B.Sc

**Colleges/institutions/University**

There are 48 Critical Care Technoloy Colleges in India. Some of the few are;

1. Parul University
2. Gur Gobind Singh Indraprastha University (GGSIP), New Delhi
3. Chirayu Medical College Indore
4. Kohinoor College of Paramedical Sciences, Mumbai
5. Symbiosis College of Nursing, Pune
6. Guru Gobind Sing Medical College, Faridkot
7. Geetanjali Medical College & hospital, Udaipur
8. Godavari College of Nursing, Jalgaon
9. Mata Basanti Devi School of Biosciences & Biotechnology, Agra
10. Rajiv Gandhi Cancer Institute & Research Centre, New Delhi
11. Charnock Healthcare Institute, Kolkata
12. Rajiv Gandhi Paramedical Institute, New Delhi
    1. **B.Sc. Diabetes Sciences**

**Introduction**

* The need for the diabetes aware skilled healthcare providers is increasing with the increase of number of diabetic cases.
* The gap between the diabetic cases and the skilled healthcare providers is expected to be increased, so will increase the demand of service providers in diabetic sciences.
* The course is intended to train Diabetes Educators who would assist doctors in their clinics in managing diabetes patients. They will be able to counsel patients about diet, initiate insulin therapy, provide psychological support etc.
* This course will enable them to be posted as assistant to a Diabetologist in a clinic or a hospital.

**Eligibility**

10+2 (PCB).

**Courses**

B.Sc.

**Colleges/institutions**

1. Mount Carmel College, Bangalore
2. Justice Basheer Ahmed Sayeed College for women, Tamil Nadu
3. Andhra University, Andhra Pradesh
4. SGT University, Haryana
5. Manav Rachna International University, Haryana
   1. **B.Sc. Dialysis Therapy**

**Introduction**

* The course has been designed to train and produce graduates who are capable of understanding and capable of assisting specialists in the different processes.
* Students are trained to use different machines for doing the dialysis process in the treatment of the patients.
* It is a 3-year degree program+ 1-year internship.
* Each student will be given the knowledge to assist in the dialysis treatment of the patient, medical concept of kidney, principles of dialysis, dialysis systems and machines, blood chemistries etc.
* All graduates require to do one-year experience through an internship.

**Duration of the course**

3+1-year

**Eligibility**

10+2 Science with minimum 50% marks. Before applying to a college, students are advised to check the procedure for admission.

**Courses**

UG & PG

**Colleges/institutions**

1. Rajiv Gandhi Paramedical Institute, Delhi
2. Lovely Professional Institute, Phagwara
3. JECRC Institute, Jaipur.
4. Grant Medical College, Mumbai
5. Chirayu Medical College, Indore
   1. **B.Sc. Echocardiography Technology**

**Introduction**

* Management of various disorders includes complex diagnostic and therapeutic procedures, which involve the use of various equipments such as computer hardware, tools, machines and pharmacological agents. Handling of these equipments as well as their regular maintenance requires advanced and focused knowledge of the scientific principles on which the tests and equipments function.
* Proper training is mandatory for imparting hand-on skill in using these equipments correctly and safely.
* Correct interpretation of images obtained by these techniques needs scientific knowledge and clinical correlation.
* Those who carry out these responsibilities must also have adequate knowledge of the structure and fuction of the human boy, especially the cardiovascular system.
* This necessitates development of a cadre consisting of science graduates, who obtain focused, relevant knowledge in this specific area of cardiovascular echocardiography technology through theoretic learning as well as supervised practical hand-on training (*Amrita Vidyapeetham*).

**Eligibility**

10+2 (PCB) with at least 50% marks.

**Courses**

UG & PG

**Colleges/institutions**

1. Delhi paramedical and Management Institute, Ashok Nagar
2. Parul University, Vadodra
3. LNTC University, Bhopal
4. Oasis College of Science, Pune
5. Medvarsity, Jubilee Hills, Hyderabad
   1. **B.Sc. Emergency Medical Technology**

**Introduction**

* Emergency Medical Technology comprises planning, overseeing and medical management for emergency medical response, disaster preparedness and medical control.
* Emergency medicine specialists offer valuable important clinical leadership and administrative services to the emergency division and other divisions of the healthcare delivery system.
* Those who trrain in emergency medicine specially have an exciting career ahead of them as several institutes across the nation are in desperate need of qualified and expert emergency medical doctors.

**Eligibility**

* For UG--10+2 (PCB) with 50% marks
* For PG—the basic eligibility criteria is MBBS, BAMS, BSMS, BHMS, BUMS, BNYS, BDS, BPT, B.Sc. Nursing,

**Courses**

UG& PG

**Colleges/institutions**

1. Sri Ramchandra Institute of Higher Education & Research, Porur, Chennai
2. Christian Medical College, Vellore
3. SRM Medical College, Chennai
4. Oasi College of Science abd Technology, Bibwewadi, Pune
5. Sigma College, Ludhyana
6. Tech Mahindra SMAR, GTB Nagar, Delhi
   1. **B.Sc. Forensic-science**

**Introduction**

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

**Eligibility**

10+2 with science stream

**Courses**

Diploma in Forensic science and criminology,

Diploma in Forensic science and law

Graduation and PG

**Institutions/colleges/universities**

* Sharda University, Greater Noida
* Lovely Professional University, Jalandhar
* University of Mumbai
  1. **B.Sc. Genetics**

**Introduction**

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

**Eligibility**

10+2 in Science

**Duration of Course:** 3 years

**Courses**

UG, PG and Research

**Job prospects**

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

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

**Jobs Available**

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

**Introduction**

* Green-technology is an umbrella term that describes the use of Technology and science to create products that are more environmentally friendly.
* The goal of green tech is to protect the environment and in some cases, to even repair past damage done to the environment.
* Examples of green tech include the technology infrastructure used to recycle waste. Purify water, create clean energy, and conserve natural resources.
* Examples of green technology

1. **Recycling and waste management,**
2. **Waste water treatment,**
3. **Clean air--**elimination of Industrial emissions**,**
4. **Self Sufficient Buildings**
5. **Generation of energy from waves**
6. **Vehicles that do not emit gases**
7. **Harnessing Solar Energy**

**Eligibility**

10+2 science stream

**Colleges/institutions**

1. Amity University, Mumbai
2. Institute of Chemical Technology
3. Maulana Azad National Institute of Technology, Bhopal
4. Deparment of Management Studies, Pondicherry University, Podicherry
5. Sathyabama University, Chennai
   1. **B.Sc. Histopathology**

**Introduction**

* This branch is the study of fungi, bacteria, viruses and other microbes that cause disease in living organisms.
* Histopathology is the diagnosis and study of diseases of the tissues and involves examining tissues and/or cells under a microscope.
* Histopathologists are responsible for making tissues diagnosis and helping clinicians manage the patient’s care.
* Histopathologists are doctors who work closely with other clinical specialties.
* They can reach a diagnosis by examining a small piece of tissue from any part of the human body.
* They examine the tissue carefully under a microscope, looking for changes in cells that might explain what is causing a patient’s illness.

**Eligibility**

10+2 (PCB) Merit based admission

Some colleges conduct entrance exam

**Courses**

* B.Sc and M.Sc

**Colleges/institutions**

1. Rama Medical College, Kanpur
2. Rama University, Hapur
3. Integral University, Lucknow
4. Magadh University,
5. AIIMS, New Delhi
6. Maulana Azad Medical College, New Delhi
7. Hamdard Institute of Medical Sciences
8. University College of Medical Sciences, New Delhi
   1. **B.Sc. Medical Imaging technology**

**Introduction**

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

**Eligibility and more**

* 10+2 science (PCB)
* **Fees for the Course:** Rs. 2 to 5 lacks
* **Salary:** Rs. 3 to 10 lacks

**Colleges**

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

**Introduction**

* The course offers practical and theoretical knowledge about the diagnosis, treatment and prevention of various kinds of diseases and health problems with the help of clinical laboratory tests.
* Professionals play a critical role in collecting the information needed to give the best care to an ill or injured patient.
* Medical practice is literally not possible without the test performed in the laboratory.
* Medical professionals play an important role in diagnosis of the diseases and providing the best care and treatment available for it.
* To excel in the program students should have good research skills and an ability to finish the task accurately.

**Eligibility**

* 10+2 (Science- PCB)
* Duration: 3 years
* Admission: entrance exam/Merit-based
* Course fee: Rs. 10,000- 2 lacks.
* Average salary: Rs.3-6 lacks PA

**Courses**

* UG and PG courses’

**Employment opportunities**

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

**Colleges/institutes/universities**

1. Christian medical college, Vellore
2. SRM Medical Coiiege, Chennai
3. GSVM Medical College, Kanpur
4. Galgotias University, Greater Noida
   1. **B.Sc. Medical Radiography & Imaging Technology**

**Introduction**

* It is a 3-year undergraduate course in **Medical Lab Technology**. Medical Radiography and Imaging Technology involves the methods and processes used to take internal pictures of the human body parts/organs, and capacities thereof, for clinical proposes, such as investigation of the body’s normal anatomy and physiology.

**Eligibility and more**

* 10+2 Science stream with at least 50% marks

**Entrance Tests Required for Admission**

1. AIEEE—All India Engineering Entrance Examination
2. AICET—All India Common Entrance Test
3. IIT JEE—Joint Entrance Examination
4. JNU—Engineering Entrance Exam
5. COMEDK—UP Sate Entrance Exam
6. AMIE—Entrance Exam
7. AMIEE—Entrance Exam
8. DCE CEE—Entrance Exam
9. BITSAT—Entrance Exam
10. BIHER—Entrance Exam
11. NIT—Entrance Exam
12. VITEEE—Engineering Entrance Exam

**Tution Fee:** Rs. 10,000—Rs. 5 lacks for a span of 4 years

**Courses**

B.Sc

**Colleges/institutions**

1. Hamdard Institute of Medical Sciences and Research, New Delhi
2. Manipal University, Manipal
3. Sharda University, Greater Noida
   1. **B.Sc. Medical Record Technologies**

**Introduction**

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

**Eligibility**

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

**Duration**

* 3-year degree course

**Who is suitable for the course**

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

**Skills Required**

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

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

**Institutions/colleges/universities**

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

**Introduction**

* Study of the diagnoses of diseases with the help of medicine as well as technology.
* One of the branches of radiology is a specialization of medicine that uses X-ray images todetect diseases and injuries, whereas the other is the study of using image techniques such as CT ScanMRI etc.
* Students in this course are taught human anatomy, physiology, bio-chemistry, general physics,and electronics etc.

**Eligibility**

10+2 (PCM) or Equivalent with minimum 50% in class X and XII

Merit based/Admission test

**Admission Tests**

AIEEE: All India Engineering Entrnce Examination

AICET: All India Common Entrance Test

IIT JEE: Joint Entrance Examiination

JNU Engineerin Entrance Examination

COMEDK: Uttar Pradesh State Entrance Exam

AMIE Entrance Exam

AMIETE Entrance Exam

DCE CEE Entrance Exm

BITSAT Entrance Entrance Exam

BIHEER Entrance Exam

NIT Entrance Exam

VITEEE Entrance Exam

**Duration of the Course:** 3 years and six months

**Fee per Semester:** Rs. 46,000 per sem

**Average Starting Salary:** Rs.3—20 lacks per anum

**Employment Area:** All the big and small hospitals and X-ray clinics

**Job Profile:** Medical adviser, load Medical Image Analysis Scientist, Marketing Executive, X-ray Technician, Image Research Assistant Manager, Radiographer, Area Sales Manager and others.

**Desirable Skills:** An analytical mind, Good Observational Skils, Excellent Verbal Communication, Good Clincal Knowledge, Excellent Written Communication,

**Courses**

Certificate course

Graduation course

**Colleges/institutions/Universities**

1. All India Institute of Medical Sciences, Delhi
2. Christian Medical College, Vellore
3. Teerthanker Mahaveer University, Moradabad and others.
   1. **Neurophysio-Technology**

**Introduction**

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

**Eligibility**

* 10+2 science

**Admission:** through entrance exam.

**Institutions/colleges/universities.**

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

**Introduction**

Nutrition and Dietetics is mainly associated with the promotion of good, clean health habits which can help to live a quality life. The focus is to educate, motivate and counsel people for a better work routine and healthy food selection.

The study of nutrition involves - understanding of the components of the food, harmful reactions, digestion and body fitness.

**Courses**

1. Diploma in Dietetics and Public Health Nutrition (DDPHN)
2. B.Sc. (Food & Nutrition)
3. M. Sc. (Food & Nutrition)
4. M.Sc. (Food & Fermentation Technology)
5. M.Sc. – Home Science (Specialization in food science & nutrition)
6. PG Diploma in Food & Nutrition

**Eligibility**

10+2 examination in any relevant stream

**Institutes/Universities**

1. National Institute of Nutrition, Hyderabad
2. University of Bombay, Mumbai
3. SNDT Women's University, Mumbai
4. University of Health Science, Vijayawada, A P
5. Jawahar Lal Nehru Technological University, Hyderabad
6. Central Food Technology & Research Institute, Mysore.
7. University of Mysore, Mysore.
8. Tamil Nadu GD Naidu Agricultural University, Coimbatore
9. All India Institute of Hygiene and Public Health, Calcutta
10. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)
    1. **B.Sc. Operation Theatre Technology**

**Introduction**

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

**Eligibility**

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

**Duration of the course**

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

**Career prospects**

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

**Institutes/colleges/universities**

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

**Introduction**

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

**Eligibility**

* 10+2 science (PCB and PCM)

**Duration of course**

* 4 years

**Entrance Tests**

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

**Institutes/colleges/universities**

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

**Introduction**

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

**Eligibility**

* 12+2 (PCB)

**Courses**

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

**Institutions/colleges/universities**

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

**Introduction**

* In this course students are provided with training in diagnostic, therapeutic, and preventive healthcare services in all medical specializations.
* After the completion of the course students are equipped to assist doctors and their job is to take medical histories of the patients, perform initial examinations of the patients and assist the doctors for diagnosis and the treatment.

**Eligibility**

10+2 (PCB) with minimum 50% marks. **Duration:** 3 years

**Course Fee:** Rs.!0,000—Rs.4 lacks (charges of the govt. and pvt. colleges respectively)

**Selection:** Merit Based/Entrance Test—Candidates are selected on the basis of marks obtained in class 12th

**Average Salary:** Rs—3-8 lacks PA

**Employment Sector:** Colleges and Universities, Hospitals, Health Care Centres, Allied Health Services, Private Clinics.

**Job Profiles:** Dietician, Professor, Patient Care Technician, Medical Assistant, Drug Safety Associate, Orthophysician Assistant, Personal Health facilitator

**Colleges/institutions**

1. DY Patil University, Navi Mumbai
2. Post Graduate Institute of Medical Education and Research, Chadigarh
3. Indian Institute of Harware Technology, Faridabad
4. Brinware Univerity, Kolkata
   1. **B.Sc Radiogrphy**

**Introduction**

* It is paramedical course which is being offered to dtdents who aspire to practice diagnostic testsin medical treatments using the methods of radiation.
* The professional experts of the field usually work in the areas such as accident and emergency, operation theatre etc.
* They are trained for taking X-rays, MRIs, and CTScans etc.
* Radiography is also used to give treatments to cancer patients.

**Eligibility**

10+2 (PCM)—admission through entrance test conducted by different institutes.

Duration: 3 years

**Courses**

* Certificate course: 2 years
* B.Sc.: 3 years

**Colleges/institutions**

1. University College of Medical Sciences,
2. Gtb Hospital
3. Rajiv Gandhi University of Health Sciences
   1. **B.Sc. Renal Dialysis Technology**

**Introduction**

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

**Eligibility**

10+2 (PCB & PCM)

**Courses:** UG and PG

**Admission Process**

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

**Major Entrance Tests**

JEE Mains, BITSAT, COMEDK,SRMJEE, UPSEE

**Institutes/Colleges/universities**

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

**Introduction**

* B.Sc. Respiratory Therapy is one among the many branches of Allied Health Science.
* The objective of the course is to train the graduates in methodologies and processes of analyzing, treating and to a certain extent carrying on diagnostic checks.

**Eligibility**

10+2 Science stream (PCB)

**Courses**

It is 4-year (3+1) course. One year of internship is compulsory for each student.

**Colleges/institutions**

1. Lokmanya Tilak General Hospital, Mumbai
2. Al-Flah University, Faridabad
   1. **B.Sc. Virology& Immunology**

**Introduction**

* Virology is the study and function of viruses and viral diseases, and immunology is a field of biomedicine that focuses on the immune system and the body’s natural defenses.
* The career of virologist is very challenging and the professionals must have thorough knowledge of study material.
* They are required mostly to work in laboratories

**Eligibility**

10+2 science (PCB)

**Courses**

B. Sc. and M. Sc.

Ph.D..

**Colleges/institutions**

National Institute of Virology, MCC Campus, Pashan, Sus Road, Pune, Maharashrta, India,

Phone: 011-20-26880982, 25889194, EXN: 296 Email: mscnirology@icmr.org.in

**3C Other Science Options**

* 1. **Actuarial Sciences**

**Introduction**

The discipline of Actuarial science applies mathematical and statistical methods to weigh risk in insurance, finance and other industries and occupations. Actuarial science comprises interrelated subjects, including mathematics, statistics, finance, economics and computer science.

**Courses**

1. PG Diploma in Actuarial sciences (PGDAS) International Post Graduate Diploma in Life Insurance (IPGDLI)
2. International Post Graduate Diploma in General Insurance (IPGDGI
3. International Post Graduate Diploma in Risk Management (IPGDRM)

**Actuarial exams by IAI**

Stage 1: Core Technical (CT)

Stage 2: Core Application (CA)

Stage 3: Specialist Technical (ST)

Stage 4: Specialist Application (SA**)**

Actuarial Common Entrance Test (ACET exam)--10+2 or equivalent exam with English. After ACET, apply at www.actuariesindia.org to become a student member of IAI.

IPGDLI, IPGDGI, IPGDRM- Graduate Degree in any discipline (including Engineering and Management) from a recognized university / Institute candidates with professional qualifications like CA, ICWAI, CS are also eligible.

PGDAS- B.Com. (With Statistics) or B.Sc.(With Math/Statistics) or B.Com. /B.Sc. in Actuarial Science or BCA or B.Sc. (Computer Science)

**Institutes/Universities**

1. VNS Gujrat University, Surat
2. IIRM Hyderabad
3. [Institute of Actuaries of India, Mumbai](https://career.webindia123.com/career/institutes/details_colleges_Institutes.asp?group=102&inst_no=8025)
   1. **Allied Health Science.**

**Introduction**

* Allied Health professionals are involved with the delivery of health or related services pertaining to the identification, evaluation, and prevention of diseases and disorders. Dietary and nutrition services rehabilitation and heath system management.
* Graduates will have wide range of opportunities in all types of hospitals including academic programmes of teaching in hospitals, health insurance companies, medical research organizations, medical transcription firms, business process outsourcing companies, etc.

**Eligibility**

10+2 Science with minimum 60% marks

Some Universities conduct Entrance Exam

**Courses**

1. B.Sc. Allied Health Science
2. PG in Health management, Heath Information Administration
3. Ph.D

**Colleges/institutions**

1. Era University, Sarfraz Gang, Hardoi Road, Lucknow
2. Noida International University, Plot No.1 Sector 17-A,Yamuna Expressway, Gautam Budha Nagar, Uttar Pradedh,

**3.66 Animal Husbandry and Dairying Program**

**Introduction**

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

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

**Eligibility**

10+2 Science

**Duration**

The duration of regular classroom program is 3 years.

**Course**

B.Sc.

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

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

**Admission Process**

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

**Job Prospects**

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

**Salary**

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

**Colleges/Universities**

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

* 1. **Archeology**

**Introduction**

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

**Courses**

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

**Eligibility**

10+2 with History

**Institutes/Universities**

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

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

**Introduction**

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

**Courses**

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

**Eligibility**

Pass 12th class in any stream

**Institutes/Universities**

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

**Introduction**

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

**Eligibility**

10 +2 with PCM

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

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

**Courses**

1. M.Sc. /M. Phil PhD (Physics)
2. M.Sc. Astronomy,
3. M.Sc. – Astrophysics
4. Integrated M. Tech- Ph. D (Tech.)
5. Program in Astronomical Instrumentation (Eligibility-B. Tech / BE degree in Electrical/ Instrumentation/ Electronics and Communications/Computer Science/Mechanical Engineering or M. Sc. degree in Physics /Electronic Science/ Astrophysics/Applied Mathematics /Applied Physics is also eligible to apply)
6. ***Ph. D. Astronomy Astrophysics***

**Universities/Institutions/Colleges**

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

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

**Courses**

UG Courses

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

PG Courses

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

**Eligibility**

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

**Courses offered by NIELT (DOEACC)**

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

**Institutes/Universities**

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

**Introduction**

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

**Courses**

1. M.A.
2. Ph.D

**Eligibility**

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

**Institutes/Universities/**

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

**Introduction**

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

**Courses**

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

**Eligibility**

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

**Institutions/Universities**

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

**Introduction**

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

**Program highlights**

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

**Job opportunities**

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

**Courses**

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

1 year

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

**Admission Procedure**

* Admissions in Fire & Safety Management Programs are through University Joint entrance test (UJET), STATES & National level entrance test.
* Direct admission can be obtained on merit cum preference basis.
  1. **Geo-informatics**

**Introduction**

* It is the combination of geology and informatics.
* Various aspects of science are included in it such as physics, chemistry, biology, mathematics.
* It helps establish a connection among people and locations etc.
* The study of the subject has several applications.
* It is applicable in telecommunications, crime simulation and criminology, car navigation, disaster risk management, study of climate change, oceanography, agriculture, maritime transport, aviation sector, to name a few.

**Eligibility**

* 10+2 Science Stream
* 3-year course

**Courses**

* B.Sc and M.sc.
* B.E and B.Tech
* Duration: 3 years, there are some Colleges and Universities that have a 4-year long bachelor’s program spanning at 8 semesters.

**Entrance Test:** conducted by various colleges include

* Proficiency in English
* Quantitative Ability
* Analytical reasoning

**Fee structure:** Rs.50,000—12.5 Lakhs

**Subjects of Study**

* Physics, chemistry, mathematics, digital thinkink
* Introduction to GIS, remote sensing, digital image processing
* Sedimentology, rock mechanics, digital photography,
* Environmental engineering

**Career prospects**

* Image analyst, project coordinator, project manager, project scientist, scientist, Georraphical Information System (GIS) expert, Research scholar, seor system executive, environment analyst, geo-spatial software engineer, professor, research scholar in institutions, drafter, geographer, surveyor etc.

**Pay:** Initial pay scale 40,000-50,000 likely to be increased with experience

**Colleges/institutions:**

* IIT Bombay,
* IIEST Shibpur, Howrah
* SIT, Pune, Symbiosis
* Lovely Professional University, Jalandhar
* Wisdom School of Management, Lucknow
* Amity University, Noida’
* DIT University, East of Kailash, Delhi
* Nirwan University, Jaipur
  1. **Material Science and Engineering**

**Introduction**

* Material Science is an interdisciplinary field involving the properties of matter and its applications to various areas of science and engineering.
* It includes the elements of applied physics and chemistry, as well as chemical, mechanical, civil and electrical engineering.
* The subject explore the structure and design of any material and how it can be used in most optimum way.
* The materials created through this field of science are used for a variety of purposes and range from nanotechnology to advanced polymers.
* Material science shows us how to apply knowledge to make better things and to make things better.
* Maerial science and engineering drives innovation in both research and industry in everything from aerospace to medicine,
* It is fundamental to all other sciences and engineering disciplines.
* Material scientists and engineers integrate chemistry, physics, mathematics and biology with engineering to address global challenges relevant to technology, society and the environment.

**Eligibility**

10+2-ience with Biology and Mathematics.

**Desirable Skills for Material Science Candidates**

|  |
| --- |
| * Analytical bent of mind * Problem solving skills |
| * Organizational skills * Decision making skills |
| * Hard working |
| * Scientific knowledge * Technical skills * Inquisitive mind * Mathematical aptitude * Detail oriented * Research skills * Creativity and innovation * Communication skills |

**Courses**

* B. Tech, M. Tech.

**Job Profile**

* Material Engineer, Material Analyst, Material Scientist, Materia Technician, manufacturing Engineer, Product Tester, Metallurgist,

**Colleges/Institution**

1. IIT Bombay,Madras, Delhi, Kharagpur, Roorkee

. Gulbarga University, Karnataka

* 1. **Merchant Navy**

**Introduction**

* Merchant Navy has no involvement in Military service.
* It is a term used to refer to the commercial sector of the maritime Industry.
* It involves shipping of cargo and people across sea route aboard cargo ships, tankers and cruise liners.
* Much of the world trade between the nations is carried out through marine trade routes.
* Positions aboard a merchant-ship can broadly be divided into following departments;

1. Deck department/navigation
2. Engineering department
3. Electro-technical department
4. Steward/hospitality department

**Eligibility**

* 10+2 (PCM)—minimum 60% marks
* Candidate must be an unmarried Indian Citizens
* Normal vision (glasses up to +/- 2.5)
* Admission is through entrance test followed by a screening test and a main written examination.
* After clearing the test, there is an interview and a medical test.
* A ship training couse is required to be completed prior to the employment.
* The course is generally short-term where the candidates are taught basic security concerns of voyaging.
* There are some private institutes, which offer training for Merchant Navy as well. These Institutes prepare students for jobs such as deck cadets and Marine Engineering Jobs.

**Courses**

After passing 10th Class student can pursue the following courses

1. Near Costal Voyage (NCV)
2. Diploma in Nautical Science
3. Commercial Diving
4. G.P. Rating

After class 12th a student is eligible to study the following courses:

1. B.Sc. Nautical Science
2. B.Sc. Marine Catering
3. BE Marine Engineering
4. BE Naval Architecture and Offshore Engineering,
5. Petroleum Engineering,
6. B.Sc. Electrical and Electronics Engineering
7. BE Mechanical Engineering,
8. BE Harbor & Ocean Engineering,
9. BE Civil Engineering
10. Electro Technical Officers Course

**Entrance Exam for Merchant Navy**

* After completion of 12th class, interested candidates can appear for the Indian Maritime University Commoon Entrance test (IMU CET) or the All India Merchant Navy Entrance Exam.
* The Exam is generally conducted in the month of May.
* Other exams are: JEE, MERI Entrance Exam, TIMSAT.

**Job prospects**

1. Jobs also available through various recruiting agencies after passing the basic course.
2. Possibility of finding the employment in cargo ship is more as compared to the others.
3. Companies that run merchant ships require trained people who can operate and maintain the ships.

**Merchant Navy Job Profile**

* Deck officer (navigation officer)
* Electro-technical officer (ECO)
* Engineer
* Ratings—ratings are seafarers who help all the officers with daily tasks
* Catering & hospitality crew (pursers, stewards, chef, housekeepers etc.)

**Pay Package**

* Rs. 12,000—8 lakhs per month depends upon the kind of job and other circumstances.
  1. **Meteorology**

**Introduction**

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

**Eligibility**

10+2 with PCM/PCB

**Courses**

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

**Institutions**

* cochin University of Science and Technology, Kerala
* IIT, Delhi
* Andhra University, Vishakhapatnam
* IIT Kharagpur, West Bengal
* Shivaji University, Vidya Nagar, Maharashtra
  1. **Metallurgy**

**Introduction**

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

**Courses**

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

**Eligibility**

10+2 with PCM

**Institutions/Universities**

* IIT Rurkee
* IIT, BHU
* National Institute of Technology, Tiruchirappalli
* Indian Institute of Engineering Science and Technology, Shibpur, Maharashtra
* Government Engineering College, Gandhinagar, Gujrat.

**3.79 Monuments & Sculpture Restoration**

**Introduction**

Restoration (cultural heritage), is the process through which trained professionals clean, repair and restore a damaged artwork. These types of art work could include paintings to sculptures to even manuscripts. These ancient artifacts, monuments and paintings are maintained and are given a new life by art conservators and art restoration or by Monuments and Sculpture restoration experts.

**Eligibility**

10+2 with History

**Courses**

1. Bachelor's Degree- in archaeology, ancient and medieval history, world history, studio art, fine art, art history, or a related field.
2. M. A. in Conservation, Preservation and Heritage Management
3. Ph. D

**Institutes/Universities**

1. National Research Laboratory for Conservation of Cultural Property - NRLC, Lucknow
2. Delhi Institute of Heritage Research and Management, New Delhi.
3. Singhad College of Architecture, Pune

**3.80 Museology**

**Introduction**

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

**Eligibility**

10+2

**Courses**

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

**Institutes/Universities**

1. National Museum of Institute of History of Art (Delhi),
2. Bhartiya Kala Nidhi, Institute of Archaeology, ASI, New Delhi.
3. Aligarh Muslim University, Aligarh, Uttar Pradesh
4. Barkatullah University.

**\**

* 1. **Nuclear Science and Technology.**

**Introduction**

* Nuclear science & Technology is the cutting edge Technology in the wrld today.
* Due to prices of fuel are going up and the energy crisis intensifies, nuclear energy seems to be the long term solution.
* India too has invested heavily in the growth of nuclear power and is acknowledge as one of the power houses of the nuclear energy in the world.
* Many plants have been set up all over the country and many more are in the pipe-line.
* There is very good scope of career for young and dynamic scientists in nuclear science and technology.

**Eligibility**

* 10+2 with PCM

**Courses**

* B.Sc. Nuclear medicine and Technology
* Diploma in Radiation Medicine
* M. Tech. in Nuclear Medicine
* M.D. in Nuclear Medicine
* PG in Nuclear Engineering
* Ph.D. in Nuclear Medicine
* Ph.D. in Nuclear Physics

**Colleges/institutions**

* 1. **Oceanography**

**Introdction**

* It is PG Course.
* The course in Oceanography deals with the Physical and biological aspects of the ocean, ocean waves currents, plate tectonics etc.

**Eligibility**

10+2 science (PCB, PCM) followed by B.Tech. B.SC. Chemistry, Physics, Zoology, Botany, Earth Science, Agriculture, Applied Science or equivalent

**Corses**

1. M.Sc Oceanography and Costal area Studies
2. M.Sc Oceanography
3. M.Phil Chemical Oceanogaphy
4. M.Tech Ocean Technology
5. M.Sc Marine Biology

**Institutes/Universities**

1. Indian Institute of Information Tehnology, Chennai
2. Indian Institute of Information Technology, West Bengal
3. University of Science & Technology, Cochin, Kerala
4. Goa University, Goa
5. Magalore University, Karnataka
6. Alagappa University, Karaikudi, Tamil Nadu
   1. **Physical Science**

**Introdction**

* Physical Science is the study of Physics and Chemistry of nature.
* The course trains the studentabout the theoretical as well as practical aspects of physical science which helps in making the candidate’s career as scientist or even a chemist.
* Physical Science can open the doors to various employment areas for a student like **astronomy, agricultural research services, aviation industry, technical journals, Indian Civil Services, cryptography etc.**

**Eligibility**

* 10+2 (PCM)
* For admission in IIT it is mandatory to qualify in J.E.E.

**Corses**

B.Sc, M.Sc

B.Tech, M.Tech—Biological Engineering

**Institutes/Universities**

1. IIT, (NEW Delhi,Madras, Guwahati, Bombay)
2. Indian Institute of Space Science and Tchnology, Thiruvananthapurum
3. National Institute of of Technology, Calicut
4. Technology Education & Research Integrated Institutions, Kurukshetra
5. Guru gobind Singh Inderprastha University, New Delhi.
   1. **Rehabilitation Psychology**

**Introduction**

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

**Courses**

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

**Eligibility**

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

**Institutions**

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

* 1. **Rehabilitation Therapy**

**Introduction**

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

**Courses**

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

**Eligibility**

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

**Institutions/Universities/Colleges**

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

**Introduction**

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

**Courses Course**

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

**Eligibility**

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

**Institutes/Universities**

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

* All India Institute of Speech and Hearing (AIISH), Mysore
* Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh
* Mani pal College of Allied Health Sciences (MCOAHS) Karnataka
* Indian Institute of Health Education and Research, Patna, Bihar
* Patna and MERF Institute of Speech and Hearing, Chennai
* Institute of Speech and Hearing, Bangalore

**3.87 Statistical Science**

**Introduction**

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

**Courses Offered**

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

**Eligibility**

10+2 pass with Maths & English.

**Institutes/Universities**

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

**Introduction**

Wildlife Biology involves field work, observing animals in their natural habitats in addition to working in labs and in diverse environments.

**Courses**

1. B. Sc. in Wild Life Biology
2. M. Sc. in Wild Life Biology

**Eligibility**

10+2 with Physics, Chemistry and Biology.

**Colleges/Institutions**

1. Institute of Environment Education and Research, Bharati Vidyapeeth (Deemed to be University), Pune, Maharashtra.
2. National Centre for Biological Sciences, Bengaluru, Karnataka.

**3.D Engineering B.Tech. Courses**

**3.89 Aeronautical Engineering**

**Introduction**

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

**Subjects involved in aeronautical Engineering**

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

**Qualification Required**

UG level

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

PG level

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

Doctoral level

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

**Courses**

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

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

**Eligibility**

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

**Courses**

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

**P.G. level**

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

**Doctor level**

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

**Institutes/colleges/universities**

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

**Course Fee**

* 6-9 lacs

**Job opportunities**

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

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

**Job positions**

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

**Avul Pakir Zainulabdeen Abdul Kalam**

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

**Abdul Kalam**

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

**3.91 Aircraft Maintenance Engineering**

**Introduction**

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

**Eligibility**

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

**Total training cost**

* Around 1.5 lacs.

**Institutions**

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

**Job opportunities**

* Those who successfully complete the training and obtain DGCA’s license are eligible to get jobs in airports and aircraft manufacturing or maintenance firms with an attractive salivary. As more and more airlines start operations in the private sector, there will be an increase in demand for aircraft maintenance engineers and mechanics.

* 1. **Architecture**

**Introduction**

* Architecture is the science that deals with the planning, designing, safety, affordability and supervision of construction work for houses, office buildings, skyscrapers, landscapes or entire cities.
* As children some of the first drawings we make are the pictures of homes.
* As adults some of the dreams we nurture most is that of making a home.
* Housing has been and will always remain one of the most significant aspect of our lives.
* With this comes the importance of people that gives shape to these dreams--**Architects**
* An Architect mainly deals with the planning, design and oversight of a building and the site surrounding it.
* They are well equipped with information on all building regulations, design aspect and other technicalities of making a home.
* Architecture as a profession is an equal blend of creativity and technicality.
* It is important for those who want to pursue architecture to really be sure that they have the aptitude and interest for it.
* Interest in designing and sketching, having passion enough to commit to the task and dreaming are some of the important attributes an aspiring architect must possess.

**The fundamentals**

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

**Career prospect**

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

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

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

**College offering B.Arch.**

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

**B. Arch admission process**

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

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

* 1. **Automobiles**

**Introduction**

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

**Eligibility**

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

**Courses**

B. Tech in Automobile Eng.

Dual Courses B. Tech+ M. Tech

**Universities/Institutions/College**

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

**Introduction**

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

**Eligibility**

10+2 Science

**Courses**

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

**Colleges/Institutions/Universities**

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

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

* 1. **Bio-technology Engineering**

**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

**Courses**

1. Gene therapy
2. Tissue culture
3. Immune technologies
4. Genetic Engineering
5. drug design
6. Stem cell techniques
7. New DNA technologies
8. Photosynthetic efficiency
9. Enzyme engineering and technology

**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

**Elligibility**

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

**Colleges/universities**

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

**Introduction**

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

**Courses**

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

**Eligibility**

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

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

**Institutes**/**Universities**

1. All India Institute of Medical Sciences New Delhi
2. Dr. B.R. Ambedkar Centre of Biomedical Research, University of Delhi,
3. Indian Institute of Technology (BHU) Varanasi
4. Department of Biomedical Engineering, (University College of Engineering) Osmania University,

Hyderabad

1. Govt. Model Engineering College, Kochi, Kerala

* 1. **Ceramic Engineering**

**Introduction**

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

**Course**

1. B. Tech
2. M. Tech

**Elibibility**

(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
5. IITs

* 1. **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.

**Courses**

B. Tech

M. Tech

**Eligibility**

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

**Institutes/Universities/Colleges**

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

**3.99 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 specializations within civil engineering are structural, water resources, environmental, construction, transportation, geo-technical engineering etc.

**Courses**

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

**Eligibility**

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

**Institutions/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/)
   1. **Cloud Computing (Electronics & communication with specialization**

**in Cloud computing & virtualization Technology )**

**Introduction**

* Cloud computing is the on-demand availability of computer system resources, especially data storage and computing power, without direct management by the user.
* Rather than keeping files on a proprietary hard drive or local storage device, cloud-base storage makes it possible to save them to a remote database
* As long as database has access to the web, it has access to the data and the software program to run it.
* Cloud computing is a popular option for people and businesses for a number of reasons including cost savings, increased productivity, speed and efficiency, performance and security.
* Cloud computing is named as such because the information being accessed is found remotely in the cloud or a virtual space.
* Companies that provide cloud services enable users to store files and applications on remote servers and then access all the data via the internet.
* This means the user is not required to be in a specific place to gain access to it, allowing the user to work remotely.
* Cloud computing takes all the heavy lifting involved in crunching and processing data awa from the device you carry around or sit and work at.
* It also moves all of that work to huge computer cluster far away in cyberspace. The internet becomes the cloud, and viola—our data, work and applications are available from any device with which you can connect to the internet in the world.
* Cloud computing is not a single piece of technology like a microchip or a cell phone.
* It is a system composed of three services

**(i) Software-as-a-Service (SaaS)**

**(ii) Infrastructure-as-a-Service (IaaS)**

**(iii) Platform-as-a-Service (PaaS)**

**Big players in the business are**

* Google Cloud
* Amazon Web Services (AWS)
* Microsoft Azure
* IBM Cloud
* Alibaba Cloud

**Eligibility**

* 10+2 In Science Stream

**Courses**

* Certification Cloud computing courses are short term programs offered online. Duration of these courses ranges from 3 to 6 months
* Cloud Computing undergraduate degree in the Course: BE/B.Tech, BCA or B.Sc. Duration ranges from 3 to 4 years.
* PG Course: Graduate in Cloud Computing: Me/M. Tech. M.Sc. MCA—2-year
* Certificate Course—6 months; 12 months

**Skills Desired**

* Candidates are required to learn every detail of the key concepts of Cloud Computing Services
* Strategic Understanding of Cloud Computing Technologies (System Automation)
* Data Centre Management (progamming)
* Security Specialisations (Linux)
* Database (Management and business skills)

**Entrance examination**

* JEE Main, JEE Advanced, VITEEE, SRMJEE, IPUCET, MHTCET.

**Job profiles**

* Cloud Architect, Cloud Software Engineer, Cloud Engineer, Cloud Service Developer, Cloud System Administrator, Cloud Consultant, Cloud System Engineer, Cloud Network Engineer.

**Top Companies hiring Cloud Computing Professional**

IBM, Oracle, Apple, Aditya Birla Group, Microsoft, Dell, Amazon, VM Ware etc.

**Colleges/Institutions/ Universities**

1. D.Y.Patil Internationl, Akurdi, Pune
2. Poornima University, Jaipur
3. Chandigarh University, Chandigarh
4. Lovely Professional University, Cannaught Place, New Delhi
5. Quantum School of Technology, Roorkee and Dehradun

* 1. **Communication Engineering,**

**Introduction**

* It is alsoreferred as Communication System Engineering
* Telecommunication Engineering is an Engineering Discipline centered on Electrical and Computer Engineering.
* It seeks to spport and enhances Telecommunication systems.
* The work ranges from basic circuit design to strategegic mass developments.
* It is concerned with sending and receiving of signals especially by means of electrical or electroacoustic devices and electromagnetic waves.

**Eligibility**

10+2 with PCM—admission through Entrance Exam—GATE test for PG

**Career & Job prospects**

1. Radio, TV, telephone, mobile companies, computers etc
2. Industries manufacturing electronics & communication products, services as communication engineers in R & D labs, workshops, management and marketing etc
3. Work opportunities are also available with space agencies as technicians, engineers and researchers, teachers in engineering colleges, etc.

**Salary:** starting with Rs.20,000 and increases manifolds with experience.

**Courses**

* UG and PG Courses

**Institutions/Colleges/Universities**

IITs at Kharagpur, Rorkee, BHU, Guwahati, Tiruchirappalli, Hyderabad; BIT Mesra—Ranchi, Jadhavpur University—Kolkata

* 1. **Computer Applications.**

**Introduction**

The Computer Application Course is designed to provide the student with the opportunity to expand and apply technological knowledge

**Eligibility**

10+2 \

**Courses**

1. Diploma in computer Applications
2. Bachelor of Computer Applications
3. Master in Computer Applications

**Institutes/Colleges/Universities**

1. University of Madras, Chennai
2. Chatrapati Shivaji Maharaj University, Kanpur
3. Niversity of Allahabad, Allahabad
4. University of Mumbai, Mumbai
5. National Institute of Electronics & Information Technology, New Delhi
6. Delhi University, Delhi
7. Various other Private Institutions
   1. **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.

**Courses**

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

**Eligibility**

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

**Universities/Institutions/Colleges**

1. Indian Institute of Technology (IIT) Kharagpur
2. Indian Institute of Technology (IIT) Kanpur
3. Indian institute of Technology (Madras)
4. Indian institute of Technology (Mumbai)
5. Delhi Technological University, Delhi
6. Rajasthan Technical University, Kota, Rajasthan
7. Indira Gandhi National Open University, New Delhi
   1. **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 ofcyber crimes such as copyright breach, hacking, illegal mass-surveillance, computer virus, virtual pestering, identity threats, etc.

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

**Eligibility**

10+2 Science Stream

**Courses**

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

**Institutes/Universities**

1. IIT (Hyderabad, Delhi, Guwahati, Allahabad)
2. AIACT&R, Delhi
   1. **Dairy Technology & Engineering**

**What is DAIRY Management? Shift at 4.95**

We love all the things milky, be it ghee, paneer. khoya, butter and various other milky products. So, it is not surprising that India in one of the largest producers in the world.

Whereas the Dairy technology is concerned with obtaining and processing milk and milk products Dairy management involves the principles and processes for managing the dairy industry. Dairy management professionals manage the entire gamut of activities involved in processing milk into diverse products besides its transportation and distribution etc. in recent years, the inclusion of technology and management principles in the dairy sector has made it more professional, setting the stage for dairy management professionals.

* Dairy technology and management courses are offered in many universities (mostly agricultural universities) in the country.
* These are designed to equip students with basic knowledge of production, design and management of the industry.
* The curriculum covers areas such as entrepreneurship, involving milk conservation, dairy processing and farm management as well.
* Standalone courses in dairy management are relatively fever.
* The principles of dairy management typically are covered in PG level programs in Dairy engineering and dairy economics.

**Courses**

* Diploma
* U Graduation (.Sc., B.Tech)
* Post Graduation (M.Sc., M. Tech.)

**Eligibility**

* 10+2 in Science stream with minimum 50% marks

**Preferred Skills**

|  |  |
| --- | --- |
| * Hard Working | * Commitment to the Industry |
| * Efficient | * Organizational Skills |
| * Team Work | * Management Skills |
| * Problem Solving Skills | * TechnicalSkills |
| * Scientific Knowledge | * Inquisitive Mind |

**Job Profiles**

* Jobs in Private and Government Sector such as;
* Dairy Technologist, Microbiologist, Dairy nutritionist, Dairy Scientists, Dairy Production Manager, Logistics And Distribution Manager, Farm Manager, Quality Contol Officer etc.

**Colleges/Institutions/Universities:** Parul University, Vadodara; Lovely Profssional Universiy, Delhi

* 1. **Electrical Engineering**

**Introduction**

* B.Tech. Engineering is a 4-year undergraduate degree course.
* It is about electicity and its fundamentals.
* It also covers various topics related to electronics and electromagnetism.
* It focuses on the industrial aspect of Electrical Engineering

**Courses**

* B.Tech, M.Teh and Research

**Eligibility**

* 10+2 Science PCM
* Minimum 55% to apply for admission
* For lateral entry a candidate is required to have a 3-year diploma
* Candidates of the upper level in enterence test list will be entitled for admission

**Entrance Tests**

1. JEE Main and advanced
2. VITEEE—Online 3-hour duration each
3. BITSAT—Online, 3-hour duration
4. WBJEE—Online- 3-hour duration

**Collfes/Institutes/Universitied**

1. IIT—Madras, New Delhi, Mumbai, Kanpur, Kharagpur, Roorkee
2. Lovely Professional University, Jalandhar, Delhi, Phagwara

* 1. **Electrical & 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.

**Courses**

1. B. Tech
2. M. Tech

**Eligibility**

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

**Institutes/Universities**

IITs including

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

**Introduction**

* One of the most sought after branch of engineering
* An electronic Engineer learn to design, develop, and maintainthe electronic circuits, devices and computer contrl syatem
* Learn the basic business skills, marketing techniques
* Learn computer programming, electronic device applications, network analysis etc

**Courses**

* B.Tech.
* B.E.

**Duration:** 4-year degree course

**Average Fee:** 2-5 lacks depending upon the college

**Eligibility:**

* 10+2 PCM
* Candidates passed diploma in engineering

**Admission:**

* Through entrance test conducted at State and National level (JEE main, JEE advanced)
* Merit based

**Job Profile:** Electrical Engineer, project manager, design engineer, system operator, sound technician, communication operator, TV production manager, audio-visual production specialist etc.

**Salary:** Average starting salary Rs.6-9 lacks per annum.

**Colleges/Institutions/Universities**

* There are about 500 colleges offering the course
* IITs
* AMU Aligarh
* Jijabai Technical Institute, Mumbai
* Harcourt Butler Technical Institute, Kanpur
* Bharti Vidyapeeth University, Pune
  1. **Electronics & 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**

* + Diploma in Electronics and Communication Engineering
  + Bachelor of Engineering in Electronics & Communication Engineering
  + Master of Engineering in Electronics & Communication Engineering

**Institutes/Universities**

1. IITs

2. Indian Institute of Technology (IIT) Kharagpur

3. Guru Gobind Singh Indraprastha University, Delh

* 1. **Environmental Enginnering**

**Introduction**

* Professional Engineering and takes from broad scientific topics like chemistry, biology, ecology, geology, hydraulics, hydrology, microbiology, and mathematics to create solutions that will protect and also improve the health of living organism and improve the quality of the environment
* It is sub discipline of civil engineering and chemical engineering.
* Protect human health
* Protects nature’s beneficial eco sysem
* Improve environmental-related quality of human life
* In short environmental engineers work to prevent, control or remadiate any hazard to the environment using their engineering expertise

**Courses** UG &PG

**Eligibility**

10+2 Science stream

**Colleges/Institution/Universities**

1. Tamilnad Agricultral University
2. Eastrern Academy of Technology and Science, bhabneshwar
3. IIT Bombay, Madras, Kharagpur Dhanbad
4. JK Laksmipat University, Jaipur—total fee….8.13 lakh
5. GSFC Univerrsity, Vadodra—total fee…5 lackc
6. Delhi Technological University, formerly known as Delhi College of Engineering, Rohni, Delhi—fee
   1. **Fashion Technology (B.Tech.)**

**Introduction**

* Fashion Technology is a term that describs innovative technologies in material procurementand fashion design and their applicability in fashion manufacturing, transportation and retail.
* This course is designed to train students in the core garment manufacturing technology with emphasis on best practices in apparel production.
* If you have a technical bent of mind along with creative prowess, then Bachelor of Fashion Technology (B.F. Tech) would be the right choice
* It is offered in very few Institute in India
* National Institute of Fashion Technology (NIFT) provides a 4-year degree course at the UG level
* At the end of the course one can expect to be hired by fashion houses and garment manufacturing units
* Opportunities are available in industries such as; garment industry, leather and Jewellary Industrry, as fashion designers and illustrators, fashion co-ordinators etc

**Eligibility**

10+2 in any discipline

**Courses**

* Bachelor’s degree
* Master’s degree
* Diploma and PG diploma
* Short term courses
* Bachelor of Leather design
* Bachelor of Product Design
* Bachelor of Textile Design

**Colleges/Institutions/Universities**

1. AAFT School of Fashion and Design
2. National Institute of Fashion Technology
   1. **Genetic Engineering**

**Introduction**

* Genetic engineering is the study of genes and the science of heredity
* Genetic Engineering involves the direct manipulation of one or more genes.most often; a gene from another species is added to an organism’s genome to to give it a desired phenotype.
* Genetic Engineers or geneticists study living organisms ranging from human beings to crop and even to bacteria.
* The experiments are conducted to determine the origine and governing laws of a particular inherited trait.
* These traits include medical condition, diseases etc.
* Genetic Engineers keep on finding ways to enhance their work profile depending on the place and organization they are working with.
* In manufacturing, they develop new pharmaceutical or agricultural products while in a medical setting, they advise patients on the diagnosed medical conditions that are inherited and also treat patients on the same.

**Courses**

1. B.Sc in Genetic Engineering
2. B.Tech and
3. M. Tech and Ph.D.

**Eligibility**

10+2 science (PCM with Biology)admission through entrance test

**Career and job prospects**

1. Medical Industry
2. Agricultural sector
3. Research and Development of government and semigovertment and private sectors
4. Pharmaceutical and biotechnology Industries

**Salary:** salary of genetic Engineer is high a compared to other branches of Engineering

**Skills required**

* Strong understanding of scientific methods and rules
* Complex problem solving and critical thinking
* Abilities to use computer aided design (CAD)
* Graphics or photo imaging
* PERL, Python
* Word processing software programs
* Excellent mathematical, deductive and inductive rasoning, reading and writing and oral comprehension skills.

**Colleges/Institutions/Universities**

1. IIT, Rorkee, Delhi, Kanpur
2. Amity University , Noida
3. Lovely Professional University, Phagwara
4. Arya Bhatta University, Patna.
   1. **Geo-informatics,**

**Introduction**

* The technology of dealing with the structure of spatial information and their qualification or classification including their storage, portrayal and dissemination is known as Geo-informatics which also includes the infrastructure necessary to secure an optimum use f information.

**Courses**

* B.Tech and M.Tech

**Duration:** 4-year degree course

**Course fee:** it varies from Rs. 60,000 t0 Rs. 2,00,000 per annum

**Eligibility:**

1. 10+2 science stream, must clear the nntrance examination of respective institute
2. IIT-JEE: Admission through IIT-JEE requires a minimum of ^0% marks in 10th class, 60% marks (and also an aggregate 60% mark in Physics, chemistry and mathematics) in 12th class. The selection is through centralized counseling and merit ranking.

**Colleges/Institutions/Universities**

1. Guru gobind singh Indraprastha University, Delhi, Fee: 1118,000
2. School of Engineeringand Technology, Gurgaon, Haryana
3. J.C.Bose University of Science &Technology, Faridabad, Haryana
4. University of Petroleum and Energy Sciences, Dehradun, Uttrakhand
5. Guru Jambheshwar niversity Institute of Science & technology, Hisar
   1. **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.

**Courses**

1. B. Tech
2. M. Tech

**Eligibility**

10+2

**Universities/Institutions**

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

**Introduction**

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

**Courses**

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

**Eligibility**

After 10+2

**Colleges/Institutions/Universities**

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

**After Graduation**

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

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

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

**Courses**

B.E /B. Tech.

M.E. / M. Tech.

M. Phil.

Ph. D

**Eligibility**

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

**Institutes/Universities**

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

**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.
   1. **Marine Engineering**

**Introduction**

Marine Engineering deals with the nautical architecture and science. Basically it it is meant for the research conducted in the oceans, coastalor land waters connected to the sea. Marine engineers have the entire responsibility of the ships technical management.

**Eligibility**

* 10+2 (PCB)
* For IIT—through JEE
* Duration—4 years

**Courses**

1. Diploma in Marine Engineering
2. B.E. in Marine Engineering
3. B.Tech in Marine Engineering
4. Master of Technology in Air Armament
5. Master of Engineering in Marine Engineering
6. Master of Technology in Marine Engineering
7. M.Tech in Ocean Engineering and Naval Architecture

**Institutes/Universities**

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

**Introduction**

* It combines engineering, physics and chemistry principles to solve real-world problems associated with nanotechnology, biotechnology, information technology, energy, manufacturing and other major engineering disciplines.
* Material engineers work with materials, ceramics and plastics to create new materials.
* Material engineers develop process and test materials used to create a range of products, from computer chips and aircraft wings to golf club and biomedical devices.
* The ability to create new materials and perform better is the key to many advances in areas of science and engineering, be it in industry or organizations.
* Material engineering is a crucial stepping stone to innovation, allowing us to push technological boundries
* It is relatively a new field of engineering that in a world focused on sustainability, will only continue to grow
* Material science is a interdisciplinary field and makes hot career choice for students because of its vastness of applications.

**Courses**

* B.Tech
* To pursue M,E and M.Tech one needs to qualify GATE (Graduate Aptitude Test in Engineering)
* Ph.D after PG

**Eligibility**

10+2 PCM and English. Entrance test is conducted at both state and national level

**Colleges/institutions/Universities**

1. IIT—Madras, Bombay, Kharagpur, Roorkee Delhi, BHU, Kanpur,
2. Indian School of Mines Jharkhand
3. Indian Institute of Engineering Science and Technology—West Bengal
   1. **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.

**Courses**

* Certificate in Mechanic of four Wheeler
* Diploma in Mechatronics
* Diploma in Mechanical Engineering
* Bachelor of Engineering in Mechanical Engineering
* Bachelor of Technology in Mechanical & Automation Engineering
* Bachelor of Technology in Mechanical Engineering
* Bachelor of Technology in Mechatronics
* Master of Engineering in Mechanical Engineering
* Master of Engineering in Tool Design
* Master of Technology in Mechanical Engineering
* Doctor of Philosophy in Mechanical Engineering

**Eligibility**

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

**Institutes/Universities**

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)
5. Mechanical Engineering is a very popular course and perhaps one of the oldest also. The list of institutes is exhaustive apart from the few mentioned here. A number of other institutes conduct this course
   1. **Mecha-tronics,**

**Introduction**

* Mechatronics is composed of “mecha” from mechanism and “tronics” from electronics
* Mechatronics or Mechatroics Engineering is an interdisciplinary branch of engineering that focuses on the engineering of electronic, electrical, computer and mechanical engineering
* Mechatronics studies combine the concepts of engineering, robotics, automation and control
* Mechatroniccs lays the foundation for the expected growth in automation and manufacturing
* Robptics control systems and electromechanical systems fall under mechatronics
* Mechatronics specialists know both mechanical and electrical engineering fundamental—they speak both languages—so a mechatroics specialist can work with mechanical and electrical engineering teams

**Career in Mechatronics**

* Mechatronics specialists work in the fields of cyber security, telecommunication, computer science, automotive engineering, robotics, artificial intelligence and consumer products and packaging

**Eligibility**

10+2 PCM

**Courses**

* B. Tech.
* M.Tech

**Colleges/Institutions/Universities**

1. Manipal Institute of Technology, Manipal
2. College of Engineering, Pune
3. SRM Institute of Science and Technology, Chennai
4. Vellore Institute of Technology, Vellore
5. Lovely Professional University, Phagwara
6. Indian Institute of Engineering Science and Technology, Shibpur
7. Kumaraguru College of Technology, Coimbatore
   1. **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**

Bachelor of Engineering in Medical Electronics

Bachelor of Technology in Medical Electronics

Bachelor of Engineering in Medical Electronics Engineering

**Eligibility**

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

**Institutes**/**Universities**

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

**Introduction**

* It is about the physical and chemical behavior of metallic elements, their intermetallic compounds and alloys
* The science of metallurgy is divided into physical metallurgy and chemical metallurgy
* Physical metallurgy focuses on the mechanical properties of metals, physical properties of metals. It includes the crystallography, material characterization and failure mechanism
* Whereas chemical metallurgy includes mineral processing, extraction of metals, thermodynamics, electrochemistry and chemicaldegradation (corrosion)

**Duration:** 4 years

**Courses**

B.Tech ; M.Tech

**Eligibility**

10+2 Science stream

**Colleges/Institutions/Universities**

1. IIT Bombay, Madras, Delhi,
2. Maharaja Sayajirao University of Baroda, vadodra
3. Indian Institute of Technology and Science, Shibpur
4. Jadhavpur University, Calcutta
5. Punjab Engineering College, Chandigarh
   1. **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**

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

**Eligibility**

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

**Institutes/Universities**

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

**Introduction**

* It focuses on all aspects of modern race vehicles, from hifgh performance engines, use of hybrid power and power delivery,to the high performance end of the spectrum of aerodynamics and vehicle stability mechanism and methodologies.
* While working in design, testing or prooductin, a **motorsport engineer** may assess new ideas by looking at performance, strength, cost and safety.
* Design prototype with **Computer Aided Design (CAD)** software, test components and body work.
* This industry requires total commitment from its engineers and candidates will need skills, experience and qualification to make their mark.
* A degree in motorsport engineering is very hard to earn.
* A lot of blood, sweat and tears go into successfully completing motorsport engineering courses
* The reward is definitely worth all the hard work.

**Courses**

* B.Tch—4-year degree course and
* M.Tech.

**Salary:** Rs.4,50,000 per annum at the entry level which gradually increases with the increase in experience

**Employment opprtnities:** in motorsport technology and design industry

**Eligibility**

10+2 PCM and computer

**Admission Process:** Entrance examination on college level. Those applying for the course are required to have prior knowledge of basic physics and kinematics

**Colleges/Institutions/Universities**

Being a new branch in India, only 2 institutes offer this course;

1. **Cornerstone International College,** Chennai
2. **Hindustan Institute of Technology and Science,** Chennai
   1. **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
   1. **Nuclear Science and Technology (Nuclear Engineering)**

**Introduction**

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

**Courses recognized under nuclear Science and technology**

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

**Job Opportunities**

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

**Eligibility:**

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

**Duration the of course:** 4 years

**Institutes/colleges/institutes**

1. Koneru lakshmaiya University, Guntur.
2. S.R.M. University, Kanchipuram
3. Manipal Institute of Technology, Karnataka.
4. School of Nuclear aaaaenergy, Pandit Deen Dayal Petroleum University, Gandhi Nagar.
5. Amity School of Nuclear Science and Technology.
   1. **Petroleum Engineer**

**Introduction**

* Petroleum Engineering is a discipline concerned with the surface activities related to the production of hydrocarbons—which can be either crude oil or natural gas.
* These are the activities within the upstream sector of the oil and gas industry that includes exploration for hydrocarbons.
* Petroleum Engineering is broadly consists of different areas such as drilling, reservoir and production stream.
* Drilling deals with designing and implementing procedures to drill wells as safely and economically as possible, and depending on its purpose. It may be used for analyzing hydrocarbon pools (major fossils such as coal, petroleum and natural gas are hydrocarbons).
* Reservoir Engineering deals with study of such pools and work out on ways to utilize it.
* Production Engineering comes into play after the reservoir has been understood and wells have been drilled and hydrocarbon begins to flow.
* An important challenge facing the profession is high risk in investment under high degree of uncertainty in oil and gas reservoirs.

**Qualification**

PCM in class 11th and 12th.

Test: All India Entrance test such as JEE

After graduation: M. Tech and later Ph.D

**Institutes and URLS:**

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

**Pros and cons:**

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

**Skill/traits**

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

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

* 1. **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.

**Courses**

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

**Eligibility**

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

**Institutes**/**Universities**

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

**Introduction**

* This 4-year degree course in **Power Engineering** is being offered by NPTI, National Power Training Institute (NR) is first of its kind in the country
* It is a sub field of Electrical Engineering
* It deals with the generation, transmission, distribution and utilization of electric power and the electrical apparatus connected to such systems
* This program addresses the technical and human resourse needs of the power sector
* Power industry requires trained man power for project planning, implementation, erection, commitioning, operation & maintenance, protection and transmission & distribution
* No conventional engineering steam available in educationalinstitution can eqip a peson with such vast knowledge of different inputs equired fo the job performance in the powe sector

**Admission:**

* Admission to this course is made through common Entrance tes conducted by Guru Gobind Singh Indraprastha University (GGSIPU) in May/June every year with an intake of 60 students.
* 6 seats are reserved for Diplima Holders who are admitted through an antrance test conducted by GGSIPU in the third semester directly

**Courses**

* 10+2 with PCM from any Recognised Board
* Lateral entry requires diploma in Mechenical/Electrical Engineering from an approved Institution

**Eligibility**

**Colleges/Institutions/Universities**

1. GGSIPU, Delhi
2. West Bengal University of Technology, Durgapur (WB)
   1. **Production Engineering**

**Introduction**

* It is also known as manufacturing Engineering
* It is a subset of Mechanical Engineering with the focus at machine tools, material science, tribology and quality control
* High quality products need planning, designing, developing, and managing of various processes., it helps in all these processes
* It blends science and technology together

**Courses**

1. UG—B.Sc, B.Tech, duration—3-4 years
2. PG—M.Sc., M.Tech and
3. Ph.D

**Eligibility**

* 10+2 PCM with atleast 60% marks
* Selection through JEE main, VITEE, UPSEE, GATE, MHT-CET, BITSAT

**JobProspects**

* Production Engineers are in high demand in India and abroad
* Jobs available across various industries such as Pharmaceuticals, reswarch labs, manufacturing sector, communication sector, travet and tours, sports, heathcare, information technology and every other sector

**Salary:** entry level Rs. 2.5—5 lakhs upto Rs. 15 lakhs at senior level

**Colleges/Institutions/Universities**

1. Iit Delhi; Roorkee admission—JEE M, Fee—9 lakhs
2. Vellore Institute of Technology, Vellore; Admission—merit based; Fee—Rs. 7 lakhs
3. Jadhavpur University, Jadhavpur, Kolkata, Admission—GATE, WBJEE Fee—Rs. 8 lakhs
   1. **Robotics**

**Introduction**

It is the branch of engineering-technology that involves the conception, design, manufacture and operation of robots. Most of the machines that we use today are a part of the Robotic technology that has encompassed our entire society and our lives.

**History of robotics in Education**

* The first educational robotics program called LOGO was introduced by Seymore Papert in 1980.
* LOGO is actually a programming language, he developed it to control robot “turtles”—to move them forward and backward, a specified distance, turn right or left a specified degree, drop a pen and draw.
* One of the next iteration of robotics education was LOGOs collaboration with Lego. It was first controlled through personal computers and later in the form of fully programmable bricks.
* This became what we know today as ***Lego Mindstorms.***
* Lego has continued to provide educational programs with its products for grades K-12 (from kindergartens to 12th class) with a variety of robotic capabilities.
* In addition to Lego, many companies now provide robotic building kits that educators can use to build systems thinking learn engineering and practice STEM concepts, following the theories of constructions.
* Options are out there for the smallest of budgets, as well as large-scale budgets. Worldwide, non-profit organizations have inspired the formation of robotics clubs, as well as international robotics competitions.

**What is “Robotics” in broad sense?**

* Robotics is related to the science of electronics, engineering, mechanics and software development.
* Robotics is a branch of technology that deals with design, construction, operation, structural disposition manufacture and application of Robots.
* An earliest design of a humanoid Robot was given by Leonardo Da Vinci.
* The concept of robotics was originally introduced in the middle ages for entertainment.
* Robotics has changed the structure of the society.
* With the advancement of science, robots are programmed to perform human functions.
* Robotics has crept into our daily lives.
* From calculators to the laptops, and large mechanical appliances like washing machines and cars, these robotic machines have helped to cut down the labour cost, thereby enhancing the end user product.

**Career options in Robotics**

* With the rising demand, a career in robotics has steadily gained pace among the creative and talented students.
* Revolution is created in the field of Robotics when imagination is coupled up with technology.
* Robotics is an essential component in any modern manufacturing environment.
* As factories increase their use of robots, the number of robotics related jobs will grow.
* Most of the machines that we use today are a part of robotic technology that has encompassed our entire society and our lives.
* Robotics has changed the structure of the society by providing safer work conditions, be it a production plant or extracting data from CD drives to cooking food in microwave, robotics has certainly made human life easier.
* As technology progresses, so too does the scope of what is considered robotics.
* 90% of robots could be found assembling car and other vehicles in automobile factories.
* With a wide spectrum of applications, there is an immense scope for a specialization in this ever expanding field.
* Robotic arms and legs will help disabled people.
* Robotics is a multi disciplinary stream or a career choice that helps students to acquire knowledge on each subject.

**Essentials of Robotics**

* Every branch of engineering plays a vital role when you get into robotics.
* Mechanical engineering
* Electrical engineering
* Computer engineering
* Electronics
* You need to be good at mechanical, electrical engineering and also be a good programmer and material scientist.
* Robotics allows multiple points of access to science and technology for students.
* In a vast expending and lucrative career options in robotics, researchers continue to improve on design, technology, machinery and overall benefits to end user.

**Learning of Robotics at school level**

* Robotics is a production-based learning module.
* While learning how science, technology, engineering and mathematics work and interact together, creativity is increased.
* So, teaching robotics in schools gives students the opportunity to address the growing demand of teaching STEM subjects.
* In today’s technology-driven world, it is more important than ever before to prepare students for the future.
* Teaching robots to young students throughout their schooling can increase their ability to be creative and innovative thinkers and more productive members of the society.
* By teaching our students the basics of robotics, we can open the whole new world to them and exciting opportunities that they would not have access otherwise.

**Requirement of funds**

* Introducing robotics into the curriculum is a bit costly affair for schools which are not in a position to spare funds for the purpose, but grants may be sought to fund such useful endeavors.
* There are some more affordable kits that are available to suit the school budget.

**K-12 Robotics Kits and other Programming Applications**

* Lego Mindstorms has a programmable graphic user interface that enables programming, but can be modified to use common languages instead, like ‘Java’ or ‘C’.
* In addition to Lego Mindstorms and ‘WeDo’, some of their other products, for early learners are also available.

**Robotic Providers**

* Wonder Workshops ‘Dash and Dot’ robots, are a big hit with elementary-aged learners. Wonder Workshop also offers a number of kid’s programming applications, such as ‘Blockly’, which has been effective in introducing programming in classrooms at the elementary level.
* ‘Blockly’ and ‘Scratch jr’ both are kid-friendly.
* There are so many other ‘programmable’ units available for use at different stages of curriculum, such as ‘Code.org’, ‘mama.codes’ ‘Sphero’.
* “Vex Robotics” are the popular robotics provider.
* There are so many other robotic providers in America which have been going strong for more than the quarter century. We can also have a beginning, if we desire so.

**Reasons to teach robotics in schools**

* An introduction to basic programming.
* Teaching of robotics increases creativity.
* To prepare them for future
* Teaching children how to turn frustration into innovation.
* Promoting inclusivity in order to avoid marginalization.

**An introduction to basic programming**

* Teaching programming computer is an excellent skill to begin with.
* But, the abstract subject of programming can be a challenging feat for young students. .
* Robotics is simpler to understand and more tangible introduction to programming.
* When students program physical robots, it’s easier to them to see what goes wrong as they learn what robots can and cannot do.
* They learn the skills needed to create precise and accurate instructions and fun while learning valuable lessons.
* Teaching robotics in schools gives students the opportunity to address the growing demand of teaching STEM subjects while learning how science, technology, engineering and math work together and interact.

**2. Increase Creativity**

* Robotics is a production-based learning module.
* Students have the opportunity to create something tangible and make it perform the action that they program it to do.
* Not a lot of fields combine creativity with engineering and technology—robotics does.
* When students are given the opportunity to create something interactive that they think is cool, their engagement level increases and they retain more information.
* We might be surprised to see at the things kids can create when given the right information and tools.

**3. Prepare them for future**

* To make students more likely to get a job in future and earn more money in their life-time.
* It is no secret that the jobs in the STEM field are the fastest growing careers, and are projected to grow further many folds in the next decade.
* Industries such as the **“drone industry”** have grown dramatically and rapidly in the last couple of years.
* It has been reported that 15,000 drones are being sold in the USA every month.
* Growing industries are going to need people, who can come up with new and innovative ideas, and equipped with the knowledge to designed and create the technology.
* When students are introduced to robotics in their school years, they can discover any interests and talents that they may have in this job market.
* Without the knowledge or access to the robotics education, there is no way for students to build interest in these fields.
* There are lots of potential creators and inventors in schools, especially public schools, who, if given a chance and resources may realize their potential.

**4. Teaching children how to turn frustration into innovation**

* Learning how to build and program a robot can be a complex and difficult process. Many students will struggle with the concept at first and often get frustrated.
* Robotics in schools can help these students turn their frustration into creativity and innovation.
* This is a valuable life lesson that teaches our students perseverance and determination when faced with challenges.
* Students learning robotics are able to channel their frustration into trying harder and aiming higher.
* All their hard work makes them feel sweeter, when they look at that finished product.
* Teaching robotics to students is to teach them how to persist and solve problems.
* It also helps them increase their maturity levels and prepare them for real world situations.

**5. Promoting inclusivity**

* Robotics is a field that is easily accessible to a wide range of students with varying talents and skills.
* Robotics is also a field that has the ability to empower the young girls in the classroom.
* STEM focused fields are traditionally male dominated, leaving young girls to question their ability to program or build computers.
* Because the tech world is not one that focuses on or is created for the girls, by engaging them with robotics and technology in the classroom we can begin to change that.
* When girls realize their ability to build robots and program, they are empowered to have successful futures and create innovative technology.

***By the time our students graduate in a few years or so, over half of the available jobs will be in STEM field and the large chunk of the rest will require employees to have some STEM knowledge. Robotics allows multiple points of access to Science, Technology, Engineering and Mathematics for students.***

**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
   1. **Space Science.**

**Introduction**

* Space science is a field where scientists research the universe
* It is about all the scientific disciplines that involves the space exploration and stustudy of natural phenomena and physical bodies occurring in outer space such as space medicine and astrobiology
* The goal of space scientists is to explore and gain knowledge for application in technology and its development

**Eligibility**

* 10+2 PCM with Biology

**Courses**

* B. Tech in Aeospace Engineering
* B.Tech. in Avionics Engineering
* B.Tech+M.S/M.Teech (B.Tech in Engineeriig)
* M.Tech. in Electronics, Electrical, Mechanical Engineering
* Ph.D. in relevant discipline.
* **Eligibility**
* 10+2 PCM with Biology

**How to plan a career in space science after 12th**

* 10+2 with PCM with high percentage of marks
* B.E/B.Tech in Electronic/mechanical/electrical/computer Engineering OR
* M.Sc. in Mathematics, Physics or Astronomy preferably a Ph.D.
* The recruitment to ISRO is conducted by a centralized recruitment Board.
* One who meets the eligibility conditions set by ISRO can apply for jobs
* The selection is made through a written examinationand an interview
* ISRO also recruits candidates directly through campus placements from IITs and IISc

**Colleges/Institutions/Universities**

1. Indian Institute of Science, Bangaloe
2. Indian Institute of Space Science and Technology, Kerala
3. Center for Earth and Space Science, University of Hyderabad
4. Aryabhatta Research Institute Observational Sciences, Nainital
5. Indian Institute of Astrophysics, Bangalore
6. Inter-University Center for Astronomy and Astrophysics, Pune
7. National Center for Radioastronomy, Pune
8. Physical Research Laboratory, Ahmedabad
9. Radioastronomy Center, Ooty
10. Rama Research Institute, Bangalore
    1. **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.

**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)

**Eligibility**

10th / 12th for Diploma in Textile Engineering10+2 with PCM for B.E. / B. Tech.

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

**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 Engineeing & Technology, Surat, Gujarat.
7. University of Bombay, Department of Chemical Technology, Mumbai, Maharashtra

**Best Engineering Jobbs for Future**

1. Solar Photovoltaic Installers
2. Wind Turbine Service Technicians
3. Software Developers
4. Bio-medical Engineers
5. Chemical Engineers
6. Civil Engineers
7. Electrical & Electronics Engineers
8. Environmental Engineers
9. Industrial Engineers
10. Marine Engineers
11. Petroleum Engineers
12. Surveyors
13. Information Security Analysts
14. Computer and Information Research Scientists

**3.E Medical & Allied Sciences**

**3.135 MBBS, (M. D/M.S. in all branches)**

**Introduction**

It is known as Bachelor of Medicine and Bachelor of Surgery. It is under graduate course which gives an academic knowledge of human anatomy, physiology, medicine, drugs, methods of surgery, pharmaceuticals, etc. It is considered to be the most challenging course in higher education. Lakhs of students compete for admission every year because of the limited seats the students face a tough competition..**NEET** is the only examination for admission in **MBBS.**

**Eligibility**

1. 10+2 with PCB. No admission, but through scores secured in entrance test (NEET)
2. **NEET Test**;
3. All the medical Colleges either government or private, universities and deemed universities consider NEET score for MBBS admission. However All India Institute of Medical Sciences (AIIMS) and Jawahar Lal Institute of Post Graduate medical Sciences (JIPMER) do not consider NEET for MBBS admissions. These Institutes use to conduct their own examination for admission.
4. However from the year 2020 will consider the scores secured in NEET examination
5. **Age limit**
6. From 17 years to 25 years.

* 1. **BUMS**

**Introduction**

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

**Eligibility**

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

**Courses**

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

**Institutions/colleges/Universities**

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

**Introduction**

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

Ayurveda has been recognized by World Health Organization.

**Courses**

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

**Eligibility**

10+ 2 with Physics, Chemistry & Biology

**Institutes/Universities**

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

**Introduction**

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

**Courses**

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

**Eligibility**

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

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

**Institutes/Universities**

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

**Introduction**

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

**Courses**

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

**Eligibility**

10+2 with Physics, Chemistry and Biology/Botany

**Institutions/Universities**

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

**Introduction**

Dentistry deals with teeth, gums, hard and soft tissues of the oral cavity. Today, dentistry is not restricted to treating just tooth decays but also includes cosmetic dental procedures to improve a person’s appearance.

The introduction of new fields like periodontal (care of gums and the diseases), oral pathology (diagnosis for diseases that affect the mouth) and orthodontics (straightening and aligning teeth and jaws) are also part of the BDS course.

**Courses**

1. Bachelor of Dental Surgery (BDS)
2. Master in Dental Surgery

**Eligibility**

10+2 with PCB

A student needs to appear in NEET to get admission in Bachelor in Dental Surgery Course.

**Institution**

1. Maulana Azad Dental College and Hospital, New Delhi
2. Faculty of Dentistry, JMI
3. Government Dental College, Rohtak
4. Government Dental and Hospital, Afzalganj, Hyderabad
5. Government Dental College and Hospital, Vijaywada
   1. **Naturopathy**

**Introduction**

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

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

**Courses**

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

**Eligibility**

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

**Institutes/Universities**

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

**Introduction**

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

**Eligibility**

10+2 with science

**Courses**

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

**Institutes/Universities**

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

* 1. **Advertising**

**Introduction**

* Advertising chiefly targets at creating demand, encourages marketing and establishes a direct contact between manufacturers and consumers
* The entire purpose of advertising is to apprise and influence public to purchase products and services
* Advertising is done through TV, Internet, Newspapers, magazines, outdoor publicity etc.

**Eligibility**

1. Certificate course: 10+2
2. For UG degree: 10+2
3. For PG Diploma course: graduation

**Courses**

1. PG diploma in Advertising and Photography
2. PG Diploma in Advertising
3. PG Diploma in Marketig Communications Management
4. PG Diploma in Advertising& Marketing Communication
5. Integrated BA in Advertising, Sales Promotion & Sales Management (after 10+2)
6. MBA Advertising, Public Relations, Sales Marketing

**Institutes/Universities/Colleges**

1. Indian Institute of Mass Communication, JNU Campus, New Delhi
2. Xavier Institute of Communications, Mumbai
3. Annamalai University, Chinnai
4. Guru Jambeshwar University, Haryana ([www.kuk.ernet.in](http://www.kuk.ernet.in))
5. Madurai Kamraj University, Madurai ([www.mkuniversity.org](http://www.mkuniversity.org))
6. Punjabi University, Patiala ([www.universitypunjabi](http://www.universitypunjabi).org)
   1. **Administration (Public Administration)**

**Introduction**

* It deals with various concepts pertaining to administration, public services, public organizations and the constitutional framework.

**Eligibility and others**

* 10+ 2 in any discipline with at least 50 marks
* Duration:3 years
* Admission Process: both merit and entrance based
* Average fee: Rs. 1,000/- to Rs. 1,00,000/-
* Salary: Rs4,00,000/- to Rs. 5,00,000/- per annum. Salary is proportionate to the experience.

**Entrance Exam**

* **BHU UET-** National Level exam conducted by BHU for admission in B.Sc, B.Com, BA, B.P.Ed, BVSc, BFA and other UG degree programs
* **ITM-NEST,** Conducted by Gwalior University
* **LPUNEST-** Exam conducted by Lovely Professional University

**Courses**

BA Public Administration

**Area of employment:**

* Bureaucracy
* Economic development agencies
* Indian Civil Services
* Education
* Fire & Emergency Services
* Public Works
* Corporate Management, Police Department
* Secretariat Tribunal Administration
* Business Consultants
* Social Workers etc.

**Institutes/Universities/Colleges**

1. Miranda House, Delhi
2. Presidency College, Chennai (Entrance exam—BHU-UET)
3. Christian College, madras
4. Fergusson College, Pune
   1. **Animation**

**Introduction**

Animation is an exciting medium consisting of images and objects embaded to appear as moving pictures. As per traditional animation, images are drawn and painted manually on transparent celluloid sheets to be photographed and displayed on film.

The fundamentals of visual communication, iconography, image processing tools, computer painting, storyboarding techniques, creating artwork are all included in animation.

**Eligibility**

* Certificate Course: 10th passed or equivalent
* Diploma & Degree: 10+2

**Courses**

Certificate , Diploma course, Bachelor’s Degree Course

**Institutes/Universities/Colleges**

1. National Institue of Design, Ahmedabad, Gujrat
2. National Institute of Film & Fine Arts, Kolkata
3. St. Xavier’s College, Kolkata
4. Several other Private Institutions
   1. **Art Restoration**

**Introduction**

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

**Eligibility**

10+2 in any steam

**Courses**

1. Bachelor’s degreein art history, studio art, anthropology, archeology
2. M.A in art history, anthropology,archeology
3. Ph.D in art conservation

**Institutes/Universities/Colleges**

1. Krushtra University, Haryana
2. National museum, New Delhi
   1. **BA in Script Writing**

**Introduction**

* Script & Screenplay Writing is the art &craft of writing the script for mass media such as feature films, TV Serials, Episiodic web-series, TV productios, and video games.
* It is often a freelance profession
* Script writing is writing down the movement, actions, expression and dialogue of the characters in screen play format.

**Steps to become a Screenwriter**

* Start writing if you want to pursue the career in script writing.
* Learn the business
* Live the place where the work is. Mumbai is the place of Indian Film Industry in India
* Find a mentor
* Get a job in Film Industry
* Continue learning, screenriting books can also be helpful
* Join a writers’ group
* Keep building a profile, and present it when someone asks for what you are working on
* Build your support team
* Sell your script. Make connections with producers and creative executives

**Eligibility**

Script writing is a natural skill rather than the acquired one. For its finer tuning different curses are available, if one wants to pursue a career in Scripwriting after **10+2** in any discipline.

Screenwriting is not a career as such, but a waay of life. You may be able to write, you will also have to learn to use the system to push your ideas that is far more difficult than writing itself.

**Courses**

* Certificate Course: 3 months
* Diploma (UG & PG): 1 year
* UG Degree: 3 years
* PG Course: 2 years

**Institutes/Universities/Colleges**

1. NRAI School of Mass Communication, Green Park, Delhi
2. ZIMA- Zee Institute of Media & Advertisement, Jaipur
3. Garware Institute of Caree, Santacruz, Mumbai
4. Ramoji Krian University, Hyderabad
5. WWI Virtual Academy and many more
   1. **Banking Management**

**Introduction**

Bank Management includes sectors such as Investment Banking, Corporate Finance Banking, Personal, Retail and Rural Banking, Treasury Management etc. The course structure is related to fund raising through bonds and securities in the capital market, giving financial advice, plans and raising the capital or fund.

**Courses**

1. Bachelor in Finance & Investment
2. B.Com/M.Com or BBA /MBA (Finance) Financial Accounting

Financial Management International Corporate Finance Management.

Accounting Portfolio Management Risk Management

**Eligibility**

10+2 with accounts, maths and economics

**Institutes/Universities**

1. Alagappa University, Karaikudi, Tamil Nadu
2. Gulbarga University, Karnataka
3. University of Madras, Chennai
4. Bharathidasan University, Tiruchirappalli, Tamil Nadu
5. Annamalai University, Annamalai Nagar, Tamil Nadu
6. Bangalore University, Bengaluru, Karnataka
   1. **Call Centre- training.**

**Introduction**

* Big companies use to have a centralized office to answer the quaries related its products to its customers or potential customers.
* These centres also serve the pupose of telemarketing
* The service center provides voice-based or web-based informations and support to its customers in the country or abroad through trained personnels
* Call centers exist in all sectors of business
* The wide area of services provided by call centers makes it a lucrative career with a range of opportunities

**Eligibility**

* There is no specific qualification, but one needs to be at least **10+2** in any discipline.

**Courses**

**Institutes/Universities/Colleges**

1. North Star CallCenter College, Noida
2. Sapphire Call Net, New Delhi
3. Holistic Enterprise, New Delhi
4. Akiko Sherman Infotech, New Delhi
   1. **Drawing and Painting**

**Introduction**

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

**Eligibility**

10+2 in any stream

**Courses**

Graduation course: 3 years

**Colleges**

* College of Arts, Delhi
* JMI
* AMU, Aligarh
  1. **English literature.**

**Introduction**

* This course provides the understanding about the art and understanding about the English literature
* It includes the social history of England, Shakespearean era and Indian, Canadian and Australian literature
* It covers lessons on almost allthe best-known and best-loved writers such as Chaucer, Shakespeare, Swift, Milton, Jane Austen, Dickens, and the list go on.

**Eligibility**

10+2any stream with English at +2 level with at least 50% marks

**Duration:** 3 years

**Fee:** It ranges from Rs. 5000/- to Rs 1,00,000/-

**Average salary:** Rs. 2.5 lakhs to Rs.4 lakhs per annum

**Courses**

1. B.A (Hon)
2. M.A and Ph.D

**Employment Roles**

1. Content writer
2. Executive Assistant
3. School teacher and college lecturer
4. Operation team-leader
5. Copy writer
6. Marketing Manager
7. Editor etc.

**Institutes/Universities/Colleges**

1. St. Stephens College
2. Lady Shri Ram College
3. English and Foreign Language University
4. And so many other institutions
   1. **Event Management**

**Introduction**

An Event is a program, function, seminar, exhibition, show, award ceremony, marriage or even family party. The activities and assignments in event management involve event marketing, Costs and Budgets available, advertisements, reviews, demos and post

**Eligibility**

10+2 with good knowledge of English

**Courses**

1. Certificate Course in Event Management (CEM)
2. Diploma in Event Management (DEM)
3. Graduate in Management/Event Management
4. Post-Graduate Diploma in Event Management (PGDEM)

**Institutes**/**Universities**

1. National Institute of Event Management, Mumbai.
2. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)
3. Indian Institute of Event Management, Mumbai.
4. University of Mumbai, Mumbai.

**Practical Training**

Most of the institutes offer Students practical training by giving them live projects which include all kinds of small and large events.

* 1. **Fine Arts**

**Introduction**

It is the academic study of visual work of art such as painting, dance, sculpture, photography, paintings and others. The course is also known as Bachelor of Visual Arts (BVA). It is a great career choice for the aspirants who enjoy imaging and creating something new. BFA offers students professional training standards, cultural exposure, aesthetic awareness and knowledge about different types of arts.

**Courses**

1. Diploma in Fine Arts
2. Bachelor in Fine Arts
3. Master of Fine Arts
4. PhD in Fine Arts

**Eligibility**

Pass 10+2 with any subject

**Career options**

Ceramics, animation, drawing and painting, film production, craft artist, art teacher, publishing houses, sculpture, dance, film and TV, musical theatre, and others. Each area of fine arts is specific, but there are also some lapping courses.

**Institutions/colleges/universities**

1. Faculty of Music and Fine Arts, DU.
2. Department of Fine Arts, AMU
3. Department of Fine Arts, JMI
4. College of Art, University of Delhi, Delhi
5. Faculty of Visual Arts - Banaras Hindu University
6. Sir J. J. Institute of Applied Art Mumbai
7. University of Mumbai
8. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)
   1. **Fire Safety Management (100% Job oriented Program--9871549659)**

**Introduction**

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

**Program highlights**

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

**Job opportunities**

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

**Courses**

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

1 year

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

**Admission Procedure**

* Admissions in Fire & Safety Management Programs are through University Joint entrance test (UJET), STATES & National level entrance test.
* Direct admission can be obtained on merit cum preference basis.
  1. **Foreign language**

**Introduction**

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

**Eligibility**

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

**Courses (languages)**

* German
* French
* Arabic

**Institutions/Colleges/Universities**

**4.14 Hospital Managemen**

**Introduction**

* It is an undergraduate program
* Its main focus is at the different aspects of management of healthcare services in hospitals, nursing homes, clinics, diagonostic centers and other institutions related to the healthcare industry.

**Courses**

B. Sc., M.Sc., MBA, PDGM in Hospital Management

**Eligibility**

10+2 with 50% marks

**Duration**

1. Years

**Fee:** Rs. 80,000 per year

**Admission Process:** Entrace Test/Merit based

**Average Salary:** Rs. 2—5 per annum

**Job Positions:** hospital Manager, Healthcare Administrator, Hospital Dean, Hospital Superintedent, Healthcare Finance Manager, Nursing Director, Healthcare Auditor, Executive Assistant

**Colleges/Institutions/Universities**

1. Athar Institute of Health and management Studies, New Delhi, Rs. 84,000 per annum
2. UIHMT Group of Colleges, Dehradun, Rs. 75,000 per annum
3. George College, Kolkata, Rs. 75,000 per annum
4. Guru Nanak Institute of Technoogy, Kolkata, Rs. 80,000 per annum
5. Haldia Institute of Management, haldia, Rs. 60,000 per annum
6. Paramedical College Durgapur, Rs. 1,04,000 per annum
   1. **Human Resource Development**

**Introduction**

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

**Eligibility**

* 10+2 in any stream

**Courses**

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

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

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

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

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

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

**Institutions/Colleges**

(IMI, IGNOU)

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

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

**4.16 Insurance. (Opportunities in this sector)**

**Introduction**

Insurance assures compensation or re-imbursement of loss of ensured life and assets of individual or groups or companies covered under life insurance and general insurance. Life insurance relates to humans lives whereas general insurance covers all the living and non-living things.

**Courses**

1. [Certificate course on "Compliance,](https://www.insuranceinstituteofindia.com/web/guest/certificate-course) [Governance and Risk Management in](https://www.insuranceinstituteofindia.com/web/guest/certificate-course) [Insurance"\*](https://www.insuranceinstituteofindia.com/web/guest/certificate-course)
2. [Executive Diploma in Insurance](https://www.insuranceinstituteofindia.com/documents/10156/e95c9a51-2532-44a5-b4b7-178f458c0389) [Management](https://www.insuranceinstituteofindia.com/documents/10156/e95c9a51-2532-44a5-b4b7-178f458c0389)
3. B Com/M.Com/MBA
4. Post Graduate Certificate in Health Insurance
5. [Post graduate diploma in insurance](http://www.coi.org.in/web/guest/mumbai-university-pgdim) [marketing.](http://www.coi.org.in/web/guest/mumbai-university-pgdim)

**Eligibility**

For Graduation: 10+2

For post: graduation/ PG Diploma

Three years Bachelor's Degree or equivalent in any discipline

\*Associate/ Fellow Members of Institute of Company Secretaries of India or Associate/ Fellow

Members of Insurance Institute of India

**Institutes/Universities**

1. The Insurance Institute of India , Mumbai
2. University of Bombay, Mumbai.
3. Indira Gandhi National Open University, New Delhi
4. Institute of Actuaries of India, Navi Mumbai
5. The college of Vocational Studies, Delhi University, New Delhi.
   1. **Liberal Studies**

**Introduction**

Liberal studies involves the multidisciplinary study of subjects ranging from Humanities to, Sciences, Social Sciences and Arts. The aim of the course is to develop critical thinking

**Courses**

1. BA/BSC Liberal Arts
2. MA Liberal Studies
3. Doctor in Liberal Studies

**Eligibility**

10+2 or equivalent examination

**Institutes/Universities**

1. PDP University, Gandhinagar
2. University of Delhi
3. Jawaharlal Lal Nehru University, Delhi
   1. **Library Science**

**Introduction**

Library Science course is the study of managing, maintaining and preserving records and information. Information of various types is sourced and classified for users with the help of record management preserved and disseminated with the help of technology.

**Course**

1. Certificate Course in Library Science.
2. Diploma in Library Science.
3. Bachelor of Lib & Info Science (BLISc)
4. Bachelor of Library science (BLSc)
5. Masters in Lib & Info Science (BLISc)
6. Masters in Library science (BLSc)

**Eligibility**

10+2 (any stream) for Certificate & Diploma Courses

**Institutes /Universities**

1. Jai Narain Vyas University
2. University Of Rajasthan, Rajasthan
3. Nalanda Open University, Patna, Bihar.
4. Medical Library Association of India (MLAI),
5. AIIMS, New Delhi offers a diploma course in Medical Librarianship.
6. Bachelor of Library & Information sciences
7. U.P. Rajarshi Tandon Open University, Allahabad, U.P.
8. Yashwantrao Chavan Maharashtra Open University, Nashik, Maharashtra. Kota Open University, Kota, Rajasthan.
9. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in)
10. Dr.B.R. Ambedkar Open University, Telangana
    1. **Logistics and Supply-chain Management**

**Introduction**

Supply chain consists of various activities that take place between the production and distribution of materials. Logistics and supply chain management includes different sections of supply chain management like materials purchase, management of transport, warehousing, packaging and distribution, order processing, inventory management.

**Certificate, Diploma and PG Diploma courses:**

1. Certificate course in logistics Management.
2. Diploma in Cargo and Courier Management.
3. Diploma in logistics Management.
4. PG Diploma in logistics and supply chain management
5. These include both class room and distance education programs.
6. UG: 10+2.
7. PG: BA/BBA.

**Institutes/Universities**

1. National Institute of Export Management, Chennai
2. Indian Institute of Material Management Bengaluru
3. ru, Kolkata.
4. Confederation of Indian Industries Institute of logistics.
5. Indian Institute of Management – Indore (PG Diploma)
6. Centre for logistics & Integrated Material Systems, Hyderabad.
   1. **Management**

**Introduction**

Management is a vital component of an organization which determines its success or failure to a great extent. There are courses available in Marketing research, Marketing Management, HR management, Finance Management and verticals such as advertising, Operations research analysis.There are several other specialized areas like Information Technology, Hospitality, Tourism and Pharmacy Management and more.

**Courses**

1. BBA/MBA
2. Master of Marketing Research (MMR).
3. Post graduate diploma or degree after finishing graduation.
4. M .Tech, M. Sc and Graduate diploma, for which individual entrance examinations are conducted by the colleges/institutes offering the programmes.
5. Ph. D

**Eligibility**

10+2, can be entry level qualification for under graduate courses like BBA.

CAT/CMAT/ other entrance Tests organized by various institutes/Universities/Business Schools after graduation

**Institutes/Universities**

1. All IIM, Ahmedabad, Bangalore, Calcutta, Kozhikode, Lucknow, Indore
2. Faculty of Management studies, Delhi
3. IIFT Delhi
4. Department of Management Studies, IIT Madras,
5. IIT Roorkee, Kanpur
6. Indian Institute of Management Shillong
7. [Shailesh J Mehta School of Management, Indian](https://www.careers360.com/colleges/shailesh-j-mehta-school-of-management-indian-institute-of-technology-bombay) [Institute of Technology, Bombay](https://www.careers360.com/colleges/shailesh-j-mehta-school-of-management-indian-institute-of-technology-bombay)
8. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)
   1. **Marketing, international marketing**

**Introduction**

* International Marketing is defined as the exchange of commodities to meet the requirements of the people residing in different countries and exchange of these goods across Intenational Borders
* It is helpful in expending of economies
* Companies are required to give a quick response to the demands of customers with well defied marketing strategies

**Courses**

* 1. **NGO management.**

**Introduction**

* It is a course related to Social Work
* It is best suited for those who wish to pursue Social Work as their career.
* The course includes sustainable development, strategic management and planning, communication, leadership, project management and fund raising etc.
* The main objective of this course is to provide managerial training and skill to NGO workers and impart latest and most relevant skills set to a student for a career in this field.

**Courses**

1. B.A
2. M.A
3. M.Sc
4. MBA

**Eligibiity**

10+2 in any stream

**Require Skills**

1. Passion for social service and empathy
2. Dedication towards social and environmental causes
3. Leadership qualities
4. Good communication skills
5. Ability to work under pressure
6. Ability to work with team
7. Capability to work on the field for long hours
8. Logical reasoning and analytical skills
9. Managerial skills etc

**Colleges/institutios/universities**

1. IGNOU, Saket, New Delhi . Total fee:1.8 lakh
2. Amity University (online), Noida. Total fee: 1 lakh

* 1. **Philosophy**

**Introduction**

Philosophy uses the tool of logic and reason to analyze the ways in which humans experience the world’ it teaches critical thinking, close reading, clear writing, and logical analyses. It uses these to understand the language we use to describe the world and our place within.

Philosophy comes from a *Greek* word meaning “love of wisdom”

**Eligibility**

10+2 in any stream

**Courses**

BA, MA, Ph.D

**Institutions/colleges/universities**

* There are a number of colleges under DU. Getting admission in DU colleges with less than85% marks is not possible
* School of Distant Education, DU
* JMI
* AMU
* IGNOU
  1. **Physical Education (BA & B.Sc.)**

**Introduction**

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

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

**Eligibility**

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

**Courses**

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

**Institutions/Colleges/Universities**

* Jadavpur University, Kolkata
* National Post Graduate College, Lucknow
* Scottish Church College, Kolkata
* Mount Carmel College, Bangalore,
* University of Lucknow, Lucknow.
* Chaudhry Charansingh University, Meerut

And many more Institutions in different Cities.

* 1. **Photography**

**Introduction**

Photography is an art of storytelling through still photographs, used as recorded events and images of people, places, events, and objects. The course is available in fields like Press photography, Commercial, Industrial, Scientific, Medical, Forensic, Business Photography, Wildlife Photography, Fashion Photography and Portrait work etc. are covered.

**Courses**

1. Bachelor of Fine Arts Specialization Course in Visual Communication
2. MFA

**Eligibility**

10+2

**Institutes/Universities**

1. College of Arts, Delhi
2. National Institute of Photography, Mumbai
3. <http://www.focusnip.com/>
4. The Indian Institute of Digital Art and Animation, Kolkata <http://iidaaindia.com/>
   1. **Placement Training Program**

**Introduction**

* 1. **Printing and Packaging.**
  2. **Private sector and Industry.**
  3. **Public Relations**

**Introduction**

Public relation is related to corporate communication and image building. The field is involved in promoting the organizations’ goals and sustain a good reputation in public through communication. It helps to build relationship with stake holders through various sources for news/information dissemination.

**Eligibility**

Graduation in any discipline from recognized university.

**Courses**

1. M.A advertising and public relations
2. PG Diploma in Advertising and Public Relations
3. MBA Advertising and Public Relation

**Institutes/Universities/Colleges**

1. Indian Institute of Mass Communication, Delhi
2. Madurai Kamraj University, Tamilnadu
3. Aligarh Muslim University, Aligarh
4. Guru Jambeshwar University Haryana
5. Krukshetra University, Haryana
   1. **Religion**

**Introduction**

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

1. Secular perspective

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

1. Traditional Islamic perspective

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

**Eligibility**

10+2 in any stream

**Courses**

BA in Islamic Studies

**Institutions/Colleges/Universities**

* Chistiya College of Arts and Science. Aurangabad
* Maulana Azad national Urdu University, Hyderabad
* Jamia Hamdard, Delhi
* Preston International College, Chenni.
  1. **Retailing,**
  2. **Social Worker**

**Introduction**

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

**Eligibility**

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

**Courses**

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

**Institutions**

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

**Introduction**

Sports means to indulge in any kind of Physical activity or games played individually or in groups/teams for the purposes of enjoyment, learning skills and participating in competition. The course provides details of these athletic activities, management structure, rules and ethics etc.

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

**Eligibility**

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

**Courses**

1. Diploma in Sports Medicine
2. Diploma in Sports
3. Coaching Diploma in Sports Management
4. Diploma in Sports Science & Nutrition
5. Bachelor of Arts (BA) in Sports Management
6. B. Sc. in Physical Education, Health Education and Sports Sciences
7. B. Sc. in Sports and Recreation Management
8. BBA (Sports Management)
9. MBA in sports management
10. BA (Sports Management)
11. BPED (Bachelor in Physical Education)
12. Bachelor of Business Administration (BBA) in Sports Management
13. M. Sc in Sports Coaching
14. M. Phil/ Ph. D in Physical Education
15. [Post-Graduate Diploma in Sports](http://www.iiswbm.edu/WebPages/PublicPages/Admission/AdmissionSchedule.aspx#collapseEight) [Management - 1 year Full Time](http://www.iiswbm.edu/WebPages/PublicPages/Admission/AdmissionSchedule.aspx#collapseEight)
16. P. G. Diploma in Sports Science Fitness & Nutrition

**Institutions/colleges/universities**

1. Indira Gandhi Institute of Physical Education and Sports Sciences. New Delhi
2. National School of Sports, Patiala
3. Lakshmibai National College for Physical Education. Thiruvnathapuram, Kerala
4. Lakshmibai National Institute for Physical Education,Gwalior
5. SNDT Women’s University. Mmbai
6. Delhi University
7. MIT School of Management, Pune
8. ICFAI Business School, Hyderabad
9. Symbiosis International University
10. Amity School of Physical Education

**Top Jobs**

1. Athletic Coach
2. Athletic director
3. Event Co-coordinator
4. Facilities manager
5. And many more

* 1. **Students’ welfare (Graduation and Post-graduation) J M I**
  2. **Transportation and Mining-studies I.T.**
  3. **Transport Driver (Heavy Vehicle) (Deoband)**

**4.A BBA Specialization & UG Management**

* 1. **Bachelor of Business Administration**

**Introduction**

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

**Courses**

It is a under graduate level course with certain specialization such as,

1. **Banking and Insurance**
2. **Management Studies**
3. **Event Management**
4. **Finance**
5. **Finance and Financial Management**
6. **Financial Market Management**
7. **Foreign Trade**
8. **Hospital and Healthcare management**
9. **Hospitality and Hotel management**
10. **Human Resource Development**
11. **Information Technology**
12. **Marketing**
13. **Media and Communication**
14. **Business Management**

Masters in Business Administration

* MBA
* Master of Marketing Research (MMR).
* Post graduate diploma or degree after finishing graduation.
* M .Tech, M. Sc and Graduate diploma, for which individual entrance examinations are conducted by the colleges/institutes offering the programmes.
* Ph. D

**Eligibility**

* 10+2 in any discipline, with minimum 50% marks or above depending upon the criteria setup by different colleges/universities
* Most of the colleges give admission on merit basis yet most of the colleges offer admission on the basis of prformance and interview test.
* CAT/CMAT/ other entrance Tests organized by various institutes/Universities/Business Schools after graduation

**Entrance exam**

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

**Jobs after BBA**

* Human Resource Executive
* Marketing Executive
* Marketing Manager
* Sales Executive
* Research &Development (R&D) Executive

**BBA Specialization**

Some of the most popular BBA specializations are listed below

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

**Institutions/Colleges/Universities**

1. AIIM, Ahmedabad, Bangalore, Calcutta, Kozhikode, Lucknow, Indore
2. Faculty of Management studies, Delhi
3. IIFT Delhi
4. Department of Management Studies, IIT Madras,
5. IIT Roorkee, Kanpur
6. Indian Institute of Management Shillong
7. [Shailesh J Mehta School of Management, Indian](https://www.careers360.com/colleges/shailesh-j-mehta-school-of-management-indian-institute-of-technology-bombay) [Institute of Technology, Bombay](https://www.careers360.com/colleges/shailesh-j-mehta-school-of-management-indian-institute-of-technology-bombay)
8. Indira Gandhi National Open University, New Delhi (<http://www.ignou.ac.in/>)
9. Guru Gobind Singh Indraprastha University, common entrance test
10. Delhi University Joint Admission Test
11. Symbiosis Entrance Test
12. Christ University BBA Entrance exam
13. All India Management Association Graduate Aptitude Test
14. GITAM University Admission Test
15. Joint Management Entrance Test 
    1. **BBA in Banking and Insurance**

**Introduction**

Bank Management includes sectors such as Investment Banking, Corporate Finance Banking, Personal, Retail and Rural Banking, Treasury Management etc. The course structure is related to fund raising through bonds and securities in the capital market, giving financial advice, plans and raising the capital or fund.

**Courses**

1. Bachelor in Finance & Investment
2. B.Com/M.Com or BBA /MBA (Finance) Financial Accounting

Financial Management International Corporate Finance Management.

Accounting Portfolio Management Risk Management

**Eligibility**

10+2 with accounts, math and economics

**Institutes/Universities**

1. Alagappa University, Karaikudi, Tamil Nadu
2. Gulbarga University, Karnataka
3. University of Madras, Chennai
4. Bharathidasan University, Tiruchirappalli, Tamil Nadu
5. Annamalai University, Annamalai Nagar, Tamil Nadu
6. Bangalore University, Bengaluru, Karnataka

**4.40 BBA, Communication and Media Management**

**Introduction**

Media management is an area of **business administration** that deals with organizing and supervising teams of media professionals, various **mass communication** channels and technologies, **media** and entertainment productions and more.

Media management contains the functions strategic management, production management, organizational management and marketing of media enterprises.

* 1. **BBA, Event Management**

**Introduction**

* it is a career in creative field. This industry is associated with the planning and organizing of small or large scale personal and corporate events with professional insights, adding a unique touch to them.

The graduate in this discipline can pursue a career as;

* Event Coordinator,
* Creative Director,
* Marketing Manager,
* Celebrity Manager,
* Event Planner,
* Brand Manager,
* Logistics Management Expert, and others
  1. **BBA, Finance**

**Introduction**

Every institution, company, organization requires to manage and regulate its finances properly. Financial department in companies, big or small, carries a substantial weightage. Students who are good at Mathematics and statistics may opt for the course. The main object of the course is to prepare the students for entry level profiles in finance. The subject is all about maintain and analyzing the expenses at various levels of financial matters.

It covers many important topics such as Mathematics, Economics, International business, Financial theory, Accounting, Banking, corporate Finance and Fund-management etc.

* 1. **BBA, Foreign Trade**

**Introduction**

It focuses on the aspects related to foreign trade, i.e. exchange of commodities between the country/s. it involves the study of different subjects and topics related to the foreign trade. BBA foreign trade is a good choice for students who take interest in international business and trading policies of the country they belong. The course is suitable for those who have the Mathematical and numerical skills and have an interest with trading and international trading bodies. The course gives an in-depth knowledge of trade procedures, EXIM policies of India, international trade bodies, multinational agencies and their role in foreign trade.

**Job opportunities**

Jobs at export units, export promotion councils, trade regulatory bodies, MNCs, etc. the graduates can choose to be an export manager, foreign trade manager, global trade compliance advisor, relationship manager and much more.

* 1. **BBA in Healthcare Management**

**Introduction**

* Health Management or Healthcare Management designates the process of organizing and coordinating the performance of a healthcare facility.
* A health manager supervises the business and administrative aspects of a healthcare institution and is responsible for overall internal healthcare system, including clinical and non-clinical staff, partner organizations, insurance companies, government bodies etc

**Eligibility**

* 10+2 with at least 50% marks in any discipline
* Colleges conduct their own entrance examination

**Courses**

* BBA and MBA

**Colleges/institutions**

1. Goa Institute of Management, Goa
2. Faculty of Management Studies, University of Delhi, Dellhi
3. School of Management Studies, University of Hyderabad, Hderabad
4. Jamia Hamdard, New Delhi
   1. **BBA Hospital Management**

**Introduction**

It is a hotel management program. This program provides training in areas such as operations, marketing, finance management, HR management and insurance related to the healthcare industry. With the increase in demand for skilled professionals for managing and administrating the health services, the competition in the sector has also increased.

It is a three-year course divided into six semesters. Eligibility for admission is 10+2, with 50% marks.

**Top recruiters are**, restaurants, institutes nursing homes, hospitals, transport sector, universities, tourism sector, schools, self employment and others.

* 1. **BBA Human Resource Management**

Human Resource Management aims at establishing and managing the human resources in an organization to increase the performance and productivity of the company. It focuses on providing job analysis, training and development, performance and legal issues in a company thus acting as a vita body of an organization.

It is a 3-year degree course available at most of the management institutes, universities and colleges all over India. It teaches the students the knowledge and the principles which are required while handling the human resource of a company or any institution. Objectives of a company or an institution are better achieved through a qualified person in the field of human resource management.

* 1. **BBA Information Technology**

The course is designed around the key technology-related requirements of business. The course develops a student’s theoretical understanding as well as practical skills in technology essential for the smooth functioning of business. It includes data base management and networking system. The course is very holistic and ranges from the basics of computer science to the concept of software development and application programming.

A student who wants to seek admission in this course should preferably have the concept related to computers and school-level programming. IT now a days is an essential ingredient of in all sectors, hence there is a good career scope for BBA IT graduates in India.

**Admission**

Merit-based admissions with some colleges conducting separate entrance tests

**Top Jobs**

IT companies, IT consultancies, network system development, database management and design.

* 1. **BBA Marketing**

It is an under graduate Business Management under-graduate business management course. Marketing is the study of market research and analysis, product designs, pricing, promotion, selling and distribution and other similar activities.

**Some of marketing specialization**

1. Advertising Management
2. Accounting and Book-keeping
3. Business Economic Programs
4. Business Management and Operations
5. Business Marketing operations
6. Entrepreneurship and Small Business Development
7. Interactive Marketing
8. International Marketing
9. Marketing Research
10. Marketing to travel and Tourism Operations
11. Sales and Merchandising Studies
12. Special Product Marketing and many more.

* 1. **BBA Media and Communication**

**Introduction**

It is a mass media and communication course. Its students are guided to acquire the skills in professional journalism and news reporting, advertising and PR, corporate communication, TV & film production, arts, news writing, script writing, radio arts, editing etc. Truth is tried to be inculcated among the students in an effort to follow and propagate the truth and play a role of a disseminator of knowledge and maker of opinion without any bias and prejudice.

**Suitability**

* The curse is suitable for those who have good oral and written communication skills which are essential, along with the ability to listen, interview and investigate.
* Skills of accuracy, credibility, and the technical skills are the other finer ingredients of skills.
* They should be able to analyze a media topic, form or theme from a variety of perspective or level of analysis.

**Employment Areas**

* Advertising companies
* Radio and TV
* Print media
* Content developer
* Editor
* Event Planner and Script writer
* Photographer
* Proof reader
* TV anchor and many other jobs
  1. **BBA Media Management**

**Introduction**

It is a graduation course and enables to specialize in Media Management. It aims to provide deeper exposure in understanding the entertainment, journalism, broadcasting and advertisement industry.

**Admission**

* Direct admission on the basis of merit
* Admission test and counseling
  1. **Bachelor of Business Management (BBM)**

**Introduction**

Business management is the process of the planning, co-ordination and control of a business and to establish a value-creating organization.

**Courses**

1. BBA/MBA in Sales/Marketing/HR/Finance
2. BA (Economics)
3. B.Com/M.Com

**Eligibility**

* 10+2 pass with any discipline or equivalent
* Graduation for Post-Graduation degree/diploma in management
* CAT/CMAT/other entrance Tests organized by various institutes/Universities/Business Schools after graduation

**Institutes/Universities**

1. All Indian Institute of Management (IIMs)
2. Guru Gobind Singh Indraprastha University, Delhi
3. [Birla Institute of Technology and Science,](https://www.careers360.com/university/birla-institute-of-technology-and-science-pilani) [Pilani](https://www.careers360.com/university/birla-institute-of-technology-and-science-pilani)
4. [Motilal Nehru National Institute of](https://www.careers360.com/university/motilal-nehru-national-institute-of-technology-allahabad) [Technology Allahabad](https://www.careers360.com/university/motilal-nehru-national-institute-of-technology-allahabad)
5. [Jamia Millia Islamia, New Delhi](https://www.careers360.com/university/jamia-millia-islamia-new-delhi)
6. [Faculty of Management Studies, University](https://www.careers360.com/colleges/faculty-of-management-studies-university-of-delhi-delhi) [of Delhi, Delhi](https://www.careers360.com/colleges/faculty-of-management-studies-university-of-delhi-delhi)
7. [Banaras Hindu University, Varanasi](https://www.careers360.com/university/banaras-hindu-university-varanasi)
8. [Birla Institute of Technology, Mesra](https://www.careers360.com/university/birla-institute-of-technology-mesra)

* 1. **Bachelor of Management Studies (BMS)**

**Introduction**

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

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

**Eligibility**

10+2 all streams

**Institutions/Colleges**

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

**Salary**

Rs.3—8 LPA

* 1. **Corporate Intelligence**

**Introduction**

Corporate intelligence helps in making business decisions and strategies. It assesses and gives important information on present and prospective business and other matters to assist companies to avoid risks, venture into new markets/fields, mitigate business problems and carry out investigations. Its activities and work improves business opportunities. It adds to corporate, financial and legal intelligence of a company. Corporate intelligence becomes pre-requisite for new investments, combined ventures and procurements/acquisitions. It greatly helps in enhancing business opportunities and on basis of trustworthy information.

**Courses & Eligibility**

CIP®-I and Master of CI CIP®-II Module Courses CIP™-I Level Certification requires completion of courses CI 101®, CI 301, CI 302, CI 303, CI 304. Once you have completed these courses you would be eligible to take the exam.

Master of CI CIP™-II Level Certification requires completion of courses CI 401, CI 402, CI 403 and CIP™-I certification. You cannot receive the Master of CI CIP™-II certification without first receiving the CIP™-I certification.

**Colleges/Institutes/Universities**

Academy of Competitive Intelligence (ACI)

(Accredited Training + Certification Program)

6th Floor, Tower B, Green Boulevard, Sector 62, Noida, 201301

Website: [www.academyci.com](http://www.academyci.com/)

**4B Print & Visual Media**

* 1. **Advertising, communications & events**

**Introduction**

Advertising chiefly targets at creating demand, encourages marketing, and establishes a direct contact between manufacturers and consumers. The entire purpose of advertising is to apprise and influence public to purchase products and services. Advertising is done through TV, Internet, Newspapers, magazines, outdoor Publicity.

**Eligibility**

For certificate courses- 10+2

For graduate degree in mass communication- 10+2.

For post graduate diploma courses - graduation.

**Courses**

1. Diploma / PG Diploma in Advertising & Photography
2. Diploma / PG Diploma in Advertising.
3. PG Diploma in Marketing Communications Management
4. PG Diploma in Advertising & Marketing Communication
5. Integrated BA in Advertising, Sales Promotion & Sales Management (after 10+2)
6. MBA – Advertising, Public Relations, Sales Marketing

**Institutions/Colleges/Universities**

1. Indian Institute of Mass Communication, JNU Campus, New Delhi.
2. Xavier Institute of Communications, Mumbai.
3. Annamalai University, Chennai (www.annamalaiuniversity.ac.in)
4. Guru Jambeshwar University, Haryana (www.gju.ernet.in)
5. Kurukshetra University, Haryana (www.kuk.ernet.in)
6. Madurai Kamaraj University, Madurai (www.mkuniversity.org)
7. Punjabi University, Patiala ([www.universitypunjabi.org](http://www.universitypunjabi.org))

**4.56 Bachelor in journalism and Mass Communication**

Introduction

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

Eligibility

10+2 in any stream

Course

BA Journalism

Institutions/colleges/universities

Makhanlal Chaturvedi National University of Journalism, Bhopal

**4.57 Bachelor of Mass Communication (BMC)**

**Introduction**

* Mass communication is the course related to how individuals and entities relay information through mass media to large segments of the population at the same time. It usually relates to newspaper, magazine, book publishing, as well as radio, television and film, as these mediums are used for disseminating information, news and advertising.
* Mass communication course in a collective term has a series of streams like- news-reading, reporting, columnist, Anchoring, radio jockey, public-relations, advertising, production, acting, web journalism, social media etc.
* Mass communication is the process of disseminating information through a medium to a large and diverse audience.
* BMC course is a form of public communication, where the message or information is transmitted electronically or mechanically.
* Now a days Journalism and mass Communication is a very well known course combination.

**Courses**

* B.A. (Mass Communication)
* B.B.A (Mass Media Management)
* PG Diploma.(Mass Communication & Journalism)
* M.A. (Communication and Journalism)
* M.A.(Mass Communication & Journalism)
* M.A.(Mass Communication)
* M. B.A. (Mass Media Management)
* Ph. D in Mass

**Duration**

* The duration of the course is generally 3 years. In the third year, students need to choose an area of specialization like Journalism, Advertizing etc. These may vary from institute to institute. On job training is also provided through an internship in 2nd year of this course. Apart from these, seminars, group discussions and field visits are frequently undertaken for 3 years.

**Eligibility**

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

**Admission Procedure**

Admission procedure has two rounds

**First round**

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

**Second Round**

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

**Institutions/colleges**

1. AJ Kidwai MCRC JMI
2. Symbiosis Institute of Media &Communication, Pune
3. Xavier Institute of Communication, Mumbai
4. Indian Institute of Journalism & New Media, Banglore
5. School of Communication, Manipal
6. Social Communications Media Department, Sophia, Mumbai
7. Manorma School of Communication, Kerala
8. Amity School of Communication, NOIDA
9. Department of Media Studies, Christ University, Bangalore
10. Delhi College of Arts & Commerce
11. Lady Shriram College for Women, New Delhi
12. Anna Malai University, Chennai
13. Madurai Kamraj University, Chennai
14. Department of Communication & Journalism, University of Poona
15. Film & Television Institute of India (FTII), Chennai & Kolkata
16. Assam University, Silchar, Assam.
17. University of Kolkata
18. Aligarh Muslim University, U.P.
19. Banaras Hindu University, U.P.
20. Guru Nanak Dev University
21. Punjab University
22. Kurukshetra University, Haryana
23. Jawahar Lal Nehru University, New Delhi
24. Guru Gobind Singh Indraprastha University, New Delhi
25. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)
26. Sardar Patel University, Gujarat
27. Nagpur University

**Employment areas**

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

**Job types**

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

**Note:** Different colleges/Universities follow their own procedure for admission.

* 1. **Bachelor of Mass Media (BM)**

**Introduction**

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

**Eligibility**

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

Some institutes also conduct entrance examination.

**Courses**

Bachelor of Mass Media

**Institutions/Colleges/Universities**

**Employment areas**

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

**Job types**

* Columnist
* Correspondent
* Editor
* Freelance writer
* Journalist
* News Analyst
* Photo Journalist
* Reporter etc.
  1. **Bachelor of Mass Media (Hindi)**

**Introduction**

It is one of the most sought after courses for those students who have passed the 12th class examination. It includes the study of different channels of communication such as newspapers, television, radio and internet.

Media today is certainly much sought out option with a handsome of employment chance. All the required skills are inculcated during the course of study of BBM. The course also imparts other essential skills such a research aptitude and verbal as well a presentation skills

**Eligibility**

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

Some institutes also conduct entrance examination.

**Courses**

Bachelor of Mass Media

**Job opportunities**

There are a vast variety of jobs are available for BMM graduates in the field of radio, television, print media, publishing etc.

Listed below are some of the regular opportunities a BBM graduate can avail.

1. Director in television and film industry
2. Sound Engineer; responsible to maintain all the technical instruments ued to record, amplify mix the sound.
3. Event Manager
4. Journalist
5. Columnist
6. Content writer
7. New Anchor
8. Photographer
9. Proof reader and many moe
   1. **Bachelor of Media Technologies**
   2. **Bachelor of Multimedia Communication**
   3. **Bachelor of Mass Media—3 years**
   4. **Communication & events**
   5. **Communication and Media-studies**
   6. **Multimedia and Web Technology**

**Introduction**

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

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

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

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

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

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

**Five multimedia elements;**

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

**Eligibility :** 10+2

**Courses**

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

**Institutions/colleges/universities**

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

**4C Film and Theatre**

* 1. **Drama Production**

**Introduction**

Film, Drama production is a joint activity of making movies, TV shows, and sometimes commercials. The work includes camera, lightning, editing, sound and set sesign. This field deals in identifying design syles of sets, locations, graphics, props, lightning, camera angles and costumes, while working closely with the director and producer.

**Eligibility**

10+2 in any field

**Courses**

1. PG Diploma in film, TV and Digital Video Production
2. One year PG Diploma Feature film Screenply Writing
3. 3-year full time OG program in Cinema
4. 3-year PG diploma in Direction & Screen play writing
5. PG Diploma in Art Directionand Production Design
6. 3-Year full time Diploma Cource in TV Direction.
7. 3-year full-time Diploma courses in Dramatic Arts

**Institutes/Universities/Colleges**

1. Film & TV Institute of India, Pune
2. Satyajit Ray Film & TV Institute, Kolkata
3. Centre for Research in Art of Film & TV, Delhi
4. Jawahar Lal Nehru Architecture and Fine Arts University, Hyderabad
5. College of Fine Arts, Hyderabad
6. National Schoolof Drama, Delhi.
   1. **Film Choreography**

**Introduction**

Choreography is an artistic opportunity to express one's personality through the creation of dance. The course includes designing and direction of routines used in dances and performances. The course gives an opportunity to create, edit, and practice with professionalism and provide entertainment for audiences.

**Course**

1. B.A in art and dance
2. [B.A. in Dance](https://www.shiksha.com/arts-fine-visual-performing/dance-choreography/course/b-a-in-dance-savitribai-phule-pune-university-ganeshkhind-274337?city=174&locality=1012&fro=serp&pn=1&tn=5&ct=course&lti=274337&ts=87224737)
3. [B.P.A. in Dance - Kathak](https://www.shiksha.com/arts-fine-visual-performing/dance-choreography/course/b-p-a-in-dance-kathak-indian-classical-dance-banaras-hindu-university-varanasi-271493?city=209&fro=serp&pn=1&tn=4&ct=course&lti=271493&ts=87224737)
4. [M.A. in Dance](https://www.shiksha.com/arts-fine-visual-performing/dance-choreography/course/m-a-in-dance-andhra-university-visakhapatnam-269536?city=213&fro=serp&pn=1&tn=8&ct=course&lti=269536&ts=87224737)

**Eligibility**

[12th](https://www.sarvgyan.com/courses-after-12th) or equivalent exam in any stream

**Institutes/Universities**

1. [Pune University (UNIPUNE) - SPPU](https://www.shiksha.com/university/pune-university-unipune-sppu-savitribai-phule-pune-university-25004?city=174&locality=1012&fro=serp&pn=1&tn=5&lti=25004&ts=87224737&ct=institute) [(Savitribai Phule Pune University)](https://www.shiksha.com/university/pune-university-unipune-sppu-savitribai-phule-pune-university-25004?city=174&locality=1012&fro=serp&pn=1&tn=5&lti=25004&ts=87224737&ct=institute)
2. University of Mysore
3. Sangeet Natak Academy, New Delhi
4. [Banaras Hindu University,](https://www.shiksha.com/university/banaras-hindu-university-varanasi-23336?city=209&fro=serp&pn=1&tn=4&lti=23336&ts=87224737&ct=institute) Varanasi
5. Natya Institute of Kathak and Choreography, Bangaluru
6. [Andhra University Visakhapatnam](https://www.shiksha.com/university/andhra-university-visakhapatnam-2948?city=213&fro=serp&pn=1&tn=8&lti=2948&ts=87224737&ct=institute)
   1. **Film Cinematography**

**Introduction**

Students pursuing these courses are able to learn about the fundamental tools of cinematography, basic level shooting and are able to work on various digital cameras. The cinematography is a perfect blend of creative integration with the direction which enables development of unique process of film making.

**Eligibility & Courses**

After 10th / 12th

1. [Diploma in Cinematography](https://www.shiksha.com/arts-fine-visual-performing/film-making/course/diploma-in-cinematography-film-and-television-institute-of-hyderabad-srinagar-colony-330001?city=702&locality=668&fro=serp&pn=1&tn=4&ct=course&lti=330001&ts=87222299)
2. [Diploma in Film Making](https://www.shiksha.com/mass-communication-media/film-tv/course/diploma-in-film-making-seamedu-school-of-pro-expressionism-balewadi-pune-231157?city=174&locality=958&fro=serp&pn=1&tn=14&ct=course&lti=231157&ts=87222299)
3. [Bachelor of Film and Television](https://www.shiksha.com/mass-communication-media/film-tv/course/bachelor-of-film-and-television-production-kiit-kalinga-institute-of-industrial-technology-bhubaneswar-243026?city=912&fro=serp&pn=1&tn=5&ct=course&lti=243026&ts=87222299) [Production](https://www.shiksha.com/mass-communication-media/film-tv/course/bachelor-of-film-and-television-production-kiit-kalinga-institute-of-industrial-technology-bhubaneswar-243026?city=912&fro=serp&pn=1&tn=5&ct=course&lti=243026&ts=87222299)

After Graduation-

1. [PG Diploma in Film, Television and Digital](https://www.shiksha.com/mass-communication-media/film-tv/course/pg-diploma-in-film-television-and-digital-video-production-xavier-institute-of-communications-mahapalika-marg-mumbai-109388?city=151&locality=1153&fro=serp&pn=1&tn=10&ct=course&lti=109388&ts=87222299) [Video Production](https://www.shiksha.com/mass-communication-media/film-tv/course/pg-diploma-in-film-television-and-digital-video-production-xavier-institute-of-communications-mahapalika-marg-mumbai-109388?city=151&locality=1153&fro=serp&pn=1&tn=10&ct=course&lti=109388&ts=87222299)
2. [Post Graduate Certificate Course in](https://www.shiksha.com/mass-communication-media/film-tv/course/post-graduate-certificate-course-in-electronic-cinematography-tv-film-and-television-institute-of-india-ftii-erandwana-pune-109459?city=174&locality=543&fro=serp&pn=1&tn=6&ct=course&lti=109459&ts=87222299) [Electronic Cinematography (TV)](https://www.shiksha.com/mass-communication-media/film-tv/course/post-graduate-certificate-course-in-electronic-cinematography-tv-film-and-television-institute-of-india-ftii-erandwana-pune-109459?city=174&locality=543&fro=serp&pn=1&tn=6&ct=course&lti=109459&ts=87222299)

**Institutes/Universities**

1. Film and Television Institute of India, Pune
2. Satyajit Ray Film & Television Institute, Kolkata
3. [Xavier Institute of Communications,](https://www.shiksha.com/college/xavier-institute-of-communications-mahapalika-marg-mumbai-320?city=151&locality=1153&fro=serp&pn=1&tn=10&lti=320&ts=87222299&ct=institute) Mumbai
4. [Film and Television Institute of Hyderabad,](https://www.shiksha.com/college/film-and-television-institute-of-hyderabad-srinagar-colony-47710?city=702&locality=668&fro=serp&pn=1&tn=4&lti=47710&ts=87222299&ct=institute) Srinagar Colony, Hyderabad
   1. **Film Direction**

**Introduction**

Direction deals with creative aspects of production such as creating, shaping and controlling artistic and dramatic facets of a film/drama, visualization of script or screenplay, selection of setting/ locations and special costume effects. It comprises guidance for technical crew/actors in creation and development of a concept or visualization.

**Courses**

1. Bachelor’s degree program in fine arts, film, or a related field.
2. Three Year Post Graduate Diploma in Direction & Screenplay Writing
3. Three-year full-time Diploma Courses in Dramatic Arts
4. Three Year Post Graduate Diploma in Art Direction and Production Design

**Eligibility**

Bachelor’s Degree in any discipline

**Institutes/Universities**

1. National School of Drama, Delhi
2. Film and Television Institute of India, Pune
   1. **Film-making**

**Introduction**

**Eligibility**

**Courses**

**Institutes/Universities/Colleges**

* 1. **Film-Vocal and Instrumental Music**

**Introduction**

Music is an integral part of Films, Art and Theatre. The study of music includes theoretical understanding of Music and its history, interpretation of music, composition, voice instructions and much more.

**Eligibility**

10+2 Examination with Music as one of the subjects

B.A. with Music /B.A. (Hons.) in Music for PG Course

**Courses**

* BA Honours in Hindustani Music- Vocal/ Instrumental (Sitar/Sarod/ Guitar /Violin/ Santoor) or Karnataka Music
* Vocal/Instrumental (Veena/ Violin) or Percussion Music (Tabla/Pakhawaj)
* MA (Music) /MPhil/PhD (Music)

**Institutions/Universities/Colleges**

1. University of Delhi, Delhi
2. Kurukshetra University, Kurukshetra
3. Shriram Bharatiya Kala Kendra, New Delhi
4. The Kalakshetra diploma in Carnatic music (By Kalakshetra Foundation, Autonomous body under Ministry of Culture, Govt. of India), Chennai,
   1. **Performing Arts**

**Introduction**

Performing Arts is a form of artistic expression through Acting or Music performances done live for audiences, some of these include ballet, puppetry, mime.

**Eligibility**

It is better to visit the web sites for academic requirements as these vary. Some institutions base admission on auditions also.

**Courses**

1. Certificate in Performing Arts
2. BFA (Bachelor of Fine Arts)
3. BVA (Bachelor of Visual Arts)
4. B. Cr.A (Bachelor of Creative Arts)
5. [B.P.A. (Performing Arts)](https://targetstudy.com/colleges/bpa-performing-arts-degree-colleges-in-india.html)
6. Ph. D

**Institutes/Universities**

1. Delhi College of Arts, Delhi
2. Faculty of Visual Arts, Banaras Hindu University, Varanasi
3. Maharaja Sayajirao University Of Baroda, Vadodara
4. Faculty Of Fine Arts, Jamia Millia Islamia, New Delhi
5. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)
   1. **Theatre**

**Introduction**

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

**Eligibility**

10+2 in any stream.

**Courses**

BA, MA in theatre and TV

**Institutions/Colleges/Universities**

* National School of Drama, Bahawalpur House, Mandi house, New Delhi, DU.
* Lovely Professional University (admission office—connaught place)
* ICE Balaji Tele Films—Institute of Creative Excellence, Mumbai
* Asian Academy of Films and Television

**4D Tourism &travel**

* 1. **Tourism and International Business**
  2. **Tourism and Leisure services: *NOIDA*.**
  3. **Tourism & Travel**

**Introduction**

Tourism & Travels studies the physical, economic, social and cultural aspects of tourism, tourist markets, and destinations. It also studies the wider perspective of tourism as an interdisciplinary way drawing knowledge from several social science subjects.

**Courses**

1. Basic course in Travel Management. (3months / 6 months)
2. Diploma in Tourism Management
3. Diploma in International Airlines & Travel Management (IATA)
4. Masters in Tourism Administration
5. Post Graduate Diploma in Tourism & Travel

**Eligibility**

10+2 with fluency in English, at least one foreign language & also 2 or 3 regional languages.

At post graduate level: Graduation in any discipline.

**Institutes/Universities**

1. Indian Institute of Travel & Tourism Management, New Delhi
2. Indian Institute of Tourism and Travel Management, Gwalior
3. Annamalai University, Chennai
4. Kota Open University, Rajasthan
5. University of Kerala, Trivandrum
6. Pondicherry University, Puducherry
7. Indira Gandhi National Open University, New Delhi (http://www.ignou.ac.in/)

**4E Food Services & Hotel Management**

* 1. **Bachelor of Food science and Nutrition**

**Introduction**

* Bachelor of Food Science and Nutrition is a three year UG course in Food Science Program.
* It is the study of understanding the biological and chemical composition of food and how its preservation can affect the level of nutrition. Nutritionist, Diet Therapist, and Aerobic Consultants know the scienceof food and nutrition and integrate with the production and consumption of food**.**

**Eligibility**

10+2 in any stream

**Courses**

* B.Sc Food Science and Nutrition
* M.Sc Food Science and Nutrition
* Ph.D.

**Institutes/Universities/Colleges**

1. Banaras Hindu University, Varanasi
2. Banarasthali Vidyapith, Tonk, Rajasthan
3. CSA University of Agriculture and Technology, Kanpur
4. Indira Gandhi National Open University, New Delhi
5. A number of colleges offer this course.
   1. **Bachelor in Hotel Management (NIMS, Jaipur)**
   2. **Bachelor of Hospitality Management**
   3. **B.E. Food Technology and bio-chemical Engineering**
   4. **B.E. Food Technology**
   5. **B.Sc. Food Science and quality control**
   6. **B. Tech Food Science**
   7. **B.Sc. Food Technology**
   8. **B.Sc. Microbial and Food Technology**
   9. **B.Sc. Nutrition, Food Service Management and Dietetics**

**4F Designing**

* 1. **Bachelor of Designing**

**Introduction**

The field of Design courses is vast and includes product design, textile design, ceramic , interior design, fashion design, fashion retailing, gem and jewellery design. These may also include graphics design, animation, film design and video programming, footwear design, accessories, furniture design.

**After** **graduation**

1. B.Des./M.Des.
2. MA (Interior Design)

**Eligibility**

After 10+2

**Institutes/Universities**

1. National school of design, Ahmedabad
2. National institute of fashion Technology, New Delhi
3. Footwear Design and Development Institute (FDDI), Noida, Uttar Pradesh
4. Government Polytechnic, Mumbai
5. National Institute of Design, Ahmedabad
6. National institute of fashion Technology, New Delhi
7. IIT Mumbai
   1. **Bachelor of Accessory Design**
   2. **Communication Design (81)**
   3. **Furniture and interior design course**

**Introduction**

**Eligibility**

**Courses**

**Institutes/Universities/Colleges**

* 1. **Bachelor of Graphic Designing**

**Introduction**

The study of visual illustration having combination of thoughts and messages by mixing pictures, texts, symbols is known as Graphic Designing. It is actually the mode of communication through visual depictions. All the latest and modernized techniques in Graphic Designing such as grouping of typography, visual arts and the page layout techniques are used in the process.

**Courses**

1. Graduate Diploma Programme in Graphic Design
2. BA Animation and Graphic Design
3. Advanced Diploma in Graphic Design and Web Design
4. Diploma in Graphic Designing

**Eligibility**

10+2 with any stream

**Institutes/Colleges**

1. National Institute of Design, Ahmedabad
2. IDC, IIT Bombay, Mumbai
3. Delhi College of Art, Delhi
4. Department of Design, IIT, Delhi

**Note**: Graphic Design Courses are also beingoffered by various reputed private institutions. Therefore, aspirants are advised to ensure the recognition and approved courses being offered by the Private Institutes/Colleges in this field prior to admission.

* 1. **Interior Designing**

**Introduction**

The course consists of developing concepts, spaces, research and managing projects.

Interior designing is the art of designing interior furniture, furnishings, design patterns, colour combinations to meet the demand of customized solutions.

**Courses**

1. Diploma in Interior Design.
2. Bachelor of Design (B. Des) Interior Design
3. Bachelor of Science (B. Sc) Interior Design
4. Bachelor of Interior Design (BID)
5. Master of Science (M. Sc) Interior Design
6. Master of Science (M. Sc) Interior Design & Resource Management

**Eligibility**

10+2. Some colleges / universities select students based on their performance in aptitude test. The candidate’s skills in Mathematics, science, drawing skills, etc. are tested.

**Institutes/Universities**

1. School of Interior Design, CEPT, Ahmedabad, Gujarat. Design Discipline, PDPM IIITDM Jabalpur, Madhya Pradesh.
2. Utkal University of Culture, Bhubaneswar, Odisha.
3. SNDT Women's University, Mumbai, Maharashtra
4. Meera Bai Institute of Technology, New Delhi.
   1. **Jewellry Design Course**

**What is a Jewellry Design?**

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

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

**Eligibility**

10+2 in any stream for admission at UG level

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

**Courses**

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

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

**Diploma courses** are also available.

**Required skills**

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

**JEWELLERY DESIGN UG COURSES**

**BDes Jewellery design**

**Syllabus**

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

**BA Jewellery Design**

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

**B.Com. Jewellery**

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

**B. Sc. Jewellery**

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

**Gemology**

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

**Diamond grading**

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

**Jewellery manufacturing**

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

**BBA Jewellery Design and Management**

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

**Diploma Programme in Jewellery design and Technology**

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

**Comprehensive Jewellery Designing**

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

**Basic jewellery Designing**

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

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

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

**Jewellery Design: Engraving and Enameling**

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

**Jewellery Design: Stone setting**

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

**Gemology course**

**Diamonds**

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

**Coloured Gemstones**

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

**Diamond Grading Course**

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

**Colour**

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

**Clarity**

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

**Carat**

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

**Gemstone identification Course**

**Jewellery Design, quality control course**

**Jewellery Photography Course**

**Career in the Industry**

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

**Institutes/ colleges**

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

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

(a reputed institute)

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

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

* PG Diploma in managing diamond -jewelry business

Duration—1 year (GD Goenka University)

* 1. **Bachelor of Leather design**
  2. **Bachelor of Product Design**
  3. **Bachelor of Textile Design**

**4G—Certificate & Diploma Courses in Food Technology**

**4G (a) Certificate Course in Food Production and Patisserie**

**4G (b) Certificate Course in Food Technology**

**4G (c) Food Production**

**4G (d) Diploma in Food & Nutrition**

**4G (e) Diploma in Food Science and Quality Control**

**4G (f) PG Diploma in Food Analysis and Quality Control**

**5. Education**

* 1. **Teachers’ training (B. Ed; M. Ed; M.A. and research in Education)**
  2. **Diploma in Elementary Education (D.El.Ed.)**

**Introduction**

* D.Dl.Ed is a course in Elementary Education to train teachers for primary level.
* It can be done with classroom training or distance learning.
* It is a 2-year full-time course to prepare students to work in primary/upper primary schools in different states of the country.
* It includes practical training and internship along with classroom training.
* It includes principles of child development, education practice and the role of the teacher in grooming the students.

**Eligibility**

* 10+2 from a recognized board with 50% minimum marks
* The candidate should possess good communication skills, patience, creative thinking and an aptitude to teaching
* Age limit: 18-35 years

**Admission Process**

* Entance exam followed by an interview (interview after clearning the test)
* Entrance tests are conducted on an annual basis by state boards for admission to this course.
* Fee ranges from Rs. 5,000--2,00,000

**Careers and Jobs**

* On completing the course the candidate can apply in government and private schools.
* They can also take private tuitions or join/open coaching center.
* They can be record-keeper, review librarian.
* They can take up the jobs as junior teachers, content writers.
* Those who have completed the course can further pursue the Bachelor of Education (B.Ed.)

**Institutes/Universities/Colleges**

1. National Institute of Open Schooling. Noida
2. Banaras Hindu University, Varanasi
3. JMI, Delhi
4. MD University, Rohtak, Haryana
5. Indira Gandhi Open University, Delhi
6. State Council of Educational Research and Training.
   1. **Education management.**

**Introduction**

**Eligibility**

**Courses**

**Institutes/Universities/Colleges**

* 1. **Sports and Sport education D.P. Ed, B.P.Ed, M.P.Ed, *Delhi, Lucknow***
  2. **DIET**
  3. **Educational/vocational School Counselor**

**Introduction**

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

**Courses**

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

**Eligibility**

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

**Institutions/Universities**

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

**Introduction**

This course is meant for teaching in nursery schools/ playschools/ pre-schools/ kindergartens on doing early childhood education/nursery teacher training course or Montessori teacher training course. After doing these training courses, there are avenues for becoming entrepreneur in this field of education by setting up schools.

**Courses**

1. Indian Montessori Training Course (IMTC)
2. [The Online Montessori Training Course](https://www.indianmontessoricentre.org/online-montessori-training-course-omtc) [(OMTC)](https://www.indianmontessoricentre.org/online-montessori-training-course-omtc)
3. Nursery Teacher Training - N.T.T.
4. Nursery Primary Teacher Training - N.P.T.T.
5. Primary Teacher Training - P.T.T.

**Institutions**

1. Indian Montessori Centre, Chennai, Bangalore

1. All India Institute of Child Care and Education, New Delhi

**Eligibility**

Should be at least 18 years of age

Passed in 10th

**Accreditation/Recognition**

The Association Montessori International (AMI) and American Montessori Society (AMS) accredit training centres throughout the world and offer internationally recognised AMI Diploma Courses. In India, not all are accredited to AMI but are recognized by Department of Education.

**Online Montessori Training Institutes**

1. [www.indianmontessoricentre.org](http://www.indianmontessoricentre.org/)
2. [www.montessorilive.net](http://www.montessorilive.net/)
3. [www.montessoritraining.net](http://www.montessoritraining.net/)
4. [www.montessori-icme.com](http://www.montessori-icme.com/)
5. www.montessori.edu
   1. **Special Educator**

**Introduction**

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

**Courses**

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

**Eligibility**

Pass 10+2 from any subject for diploma courses.

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

**Institutes/Universities**

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

**Post graduation**

**&**

**Research Courses in Food Technology**

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

**7. Research Courses in Food Technology**

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

**8. PG Courses Humanities**

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

**9. PG Courses Commerce**

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

**Introduction**

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

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

**Eligibility, procedure**

It’s a post-graduate course.

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

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

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

**Job opportunities**

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

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

**10. PG courses in Medical Science**

* 1. **Master of cardiopulmonary Sciences**
  2. **Master of Neurology**
  3. **Master of Optometry**
  4. **Master of Pharmacy**
  5. **M.Sc. Bio-technology**
  6. **M.Sc. Medical Anatomy**
  7. **M.Sc. Medical Biochemistry**
  8. **M.Sc. Medical Microbiology.**
  9. **M. Sc. Medical Pharmacology**
  10. **M.Sc. Medical Physiology**
  11. **M.Sc. Radio-imaging Technology**
  12. **M.Sc. Operation Theatre Technology**
  13. **M.Sc. Medical Lab technology**
  14. **M.Sc. Micro-biology**
  15. **M.Sc. Nutrition & Dietetics**
  16. **PG Diploma in MRI**
  17. **PG Diploma Ct Scan**
  18. **M.Sc. Computer Science (Delhi University)**
  19. **M.Sc. Geo-science,**
  20. **M.Sc. Green technology.**
  21. **MD Anatomy**
  22. **MD Anesthesiology**
  23. **MD Biochemistry**
  24. **MD Community Medicine**
  25. **MD Dermatology, venerology and Leprosy**
  26. **MD Forensic Science**
  27. **MD General Medicine**
  28. **MD Microbiology**
  29. **MD Pediatrics**
  30. **MD Pathology**
  31. **MD Pharmacology**
  32. **MD Psychiatry**
  33. **MD Physiology**
  34. **MD Radio-diagnosis**
  35. **MD Respiratory Medicine**
  36. **MD Radiology**
  37. **MS General Surgery**
  38. **MS Medical-anatomy**
  39. **MS Obstetrics & Gynecology**
  40. **MS Ophthalmology**
  41. **MS Otto-Rhino-Laryngology**
  42. **MS Orthopedics**
  43. **Ultra Sonography- 4D (Institute of Public health & hygiene,**

**(011-26782850)**

* 1. **Master of Public Health**
  2. **Master of Community Rehabilitation..**

**11. PG Nursing**

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

**12. M.Tech.**

* 1. **M.Tech. Nuclear Engineering**
  2. **M.Tech. Aerospace**
  3. **M.Tech. Oil and Gas, Energy & Power—2years,**

**NIMS University, jaipur.**

* 1. **M.Tech. Civil Engineering**
  2. **M.Tech. Computer Science & Engineering**
  3. **M.Tech. Electronics & communication Engineering**
  4. **M.Tech. Mechanical Engineering**
  5. **Master of Computer Application (MCA)**
  6. **Current research scope in science**
  7. **Infrastructure Engineering**

**Introduction**

* An Infrastructure Engineer is a unique position that has evolved as the internet has become mainsteam.
* Infrastructure Engineers are responsible for designing, building, deploying and maintaining the IT infrastructure of an apartment complex, public facility or entire city by using the latest technology.
* An IT nfrastructure engineere ensures all the IT systems that support the business of any size to function efficiently.
* Infrastructure engineering includes working with internet connections, cabling, virtualization platforms and storage area net work.

**Skills**

* Must have a deep understanding of principles of hw a network devices functions.
* They are required to have a deep knowledge of hardware involved in this process.
* Ability to work with others especially when working with large companies.

**Education Requirements**

* Most Infrastructure Engineers entering the job market need a bachelor’s degree in a computer science and information technology field.
* Since the skill sets of Infrastructure Engineer are complex, a 4-year bachelor’s degree is not sufficient.

**13. Advanced Engineering**

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

**14. Advanced Medicines & Dentistry**

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

**15. MBA--Business Administration**

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

**16. Integrated Courses**

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

**B.Tech Colleges in Delhi**

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

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

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* BT in Civil Engg, 120 seats, 44,000/annum
* BT in Mech & Auto Engg (2nd shift also) seats 180, Rs.44,000/annum
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* And many more
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* BT in Food Tech seats 30, Rs. 37,000/annum
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* BT in Mechatronics. Rs. 60,000/annum
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* And others
* **JMI. Jamia Nagar**
* **Centre for Civil Aviation Training (CCAT), ND**

**(Approved by DGCA)**

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

1. **Job Opportunities after UG & PG**

# Generation today, have a pool of options to choose from depending upon their interest, skills and personal characteristics. Some people are not comfortable for the traditional careers and work place. They have a desire to do something different from the regular ones. Unconventional careers are becoming more and more popular with majority of individuals opting for these challenging opportunities with a will to make an impact in this ever changing and growing world.

# Considering various occupations, there will be a significant amount of growth between now and coming next 10 years. Let us look at some interesting careers which are paved by the passion of the out-of-the-box thinkers.

* 1. **AGRI-FORCE**

# Indira Gandhi National Open University (IGNOU) school of Agriculture offers a six-month post-graduate certificate program in agriculture policy to develop human resource for planning, development and implementation of National policies in agriculture.

# The program, which is also offered on line ()[www.ignouonline.ac.in/soa](http://www.ignouonline.ac.in/soa)), covers various aspects essential for policy formulation to achieve overall economic development of the country. The curriculum addresses the factors related to the agriculture development process in India, farmers’ plight, their intellectual property rights issues in case of plant breeding and others, and research opportunities.

* 1. **Army**
  2. **Athlete trainer**

# An Athlete-trainer requires a bachelor’s degree or preferably a master’s degree in athletic training.

# Gaining of experience is recommended

# Obtain certification and licensure

# Degree level: bachelor’s or master’s

# Degree field: Athletic training

# Training/experience: clinical field training constitutes experience for entry-level positions.

# Certificate: enquire, if a certificate is required

# Key skills: Decision making; communication; interpersonal skills; detail oriented; compassion

* 1. **Calligrapher**

# Calligraphy is a visual art, but one who is dedicated solely to the creation of text. It is in high demand in the areas such as wedding stationery; font and logo design;and even for the creation of inscriptions and historical documents. In fact as we move towards a world where ever increasing amount of text appear online, the hand written word seems to be more highly celebrated than ever before. *The word calligraphy is formed from two Greek words, ‘kalli’ i.e. beautiful and ‘graphy’ means writing.* “The beautiful writing”.

* 1. **Cartoonist**

# Cartoon Animators are generally required to have a bachelor’s degree in animation, graphic design or fine arts with certain skills and practical experience. Cartoon animators work in the entertainment, design and advertising industries. These professionals combine their drawing skills with art techniques to create television shows, animated commercials, and other products. A bachelor’s degree is usually required in order to become a cartoon animator, and most employers require submission of a professional portfolio as well.

* 1. **Civil Services, IAS, IPS, IRS, IRS, etc--Conducted by (UPSC)**

**Civil services Examination**

It is a nationwide competitive examination in India conducted by Union Public Service Commission for recruitment to various Civil Services of Government of India including Indian Administrative Services (IAS), Indian Foreign Services (IFS), and Indian Police Services (IPS)

**UPSC Examination:**

It is conducted in three phases – a Preliminary Examination consisting of two objective-type papers (General Studies Paper I. and General Studies Paper II also popularly known as Civil Services Aptitude Test CSAT) and a main examination consisting of nine papers of conventional type (essay type), in which two papers are qualifying and only marks of seven are counted followed by a personality test (interview)

**Process:**

The Civil Service Examination is based on the British Raj-era Imperial Civil Service tests conducted by old Indian Empires such as in the Maryann Empire and Munhal Empire. It is considered to be one of the most difficult competitive examinations in India. on average, 9,00,000 to 10,00,000 candidates apply every year and t+he number of candidates sitting is approximately 5,00,000.

**Stage I:**

**Preliminary Examination** held in June every year **results** are published in mid August

**Stage II: Mains**

* Examination held in October every year. Results are announced in January.
* Personality test (interview) - held in March. Final results are usually announced in May.
* The training program for the selected candidates usually commence the following September.

**Eligibility**

* Must be an Indian Citizen
* A Citizen of Nepal or Bhutan
* A Tibetan refugee who settled permanently in India
* A person of Indian of Indian origin who has migrated from Pakistan, Myanmar, Sri Lanka, Kenya, Uganda, Tanzania, Zambia, Malawi, Zaire, Ethiopia with the intention of permanently settling in India.

**Educational Qualification**

* A degree from central, state or a deemed university
* A degree received from correspondence
* A degree from an open university
* A qualification recognized by the Government of India as being equivalent to one of the above.
* Candidates who have appeared in ann examination the passing of which would render them educationally qualified enough to satisfy one of the above points.
* Candidates who have passed the final exam of the MBBS degree but have not yet completed an internship.
* A degree from a private university
* A degree from any foreign university
* The candidates who have passed the final exam of ICAI, ICSI, ICWAI

**Age limit (August, 1)**

* 21 years to 32 years – for general category
* 37 – for SC/ST
* 40 years – for defense service personals disabled in operation during hostilities.

**Number of attempts**

* General category – 6
* OBC ------------------ 9
* SC/ST ----------------- no limit till 32 years
* Appearing to attempt one of the papers in the preliminary examination is counted as an attempt including disqualification/ cancellation of candidature
* However, applying to sit in the exam but, failing to attend is not counted as an attempt.
  1. **Cluster Innovation Centre (CIC)** [**www.cic.du.ac.in**](http://www.cic.du.ac.in) **or** [**www.du.ac.in**](http://www.du.ac.in)
  2. **Coast Guard**
  3. **Detective (102)**
  4. **EARTH SCOPE**
* Earth science is the broadest in scope among the natural sciences.
* Brock (land), ocean, air and living organisms interact through physical, chemical and biological processes that move materials and energy on the Earth.
* This subject thus gives full understanding of the natural world we live in.
* Geo-sciences address ideological challenges and social issues.
* Vital industries like oil and mining need interaction with geoscientists for their developments.
* Hence, there stands a need to build strong departments of Earth science with sustained leadership.

**Subject Areas**

* Geosciences falls under three categories

1. Academic/research (for example, understanding origin and distribution of resources).
2. Developmental (making roads, bridges, dams etc.).
3. Awareness (global warming, climate, water and environment).
4. **Academic scenario**

* The subject is offered after 10+2, although some knowledge about rocks, fossils and environment is integrated into general science courses in schools.
* Standardized tests for colleges do not list geosciences.
* In some universities, the subject is introduced at the undergraduate level with other science subjects.
* Postgraduate education in earth science leads to an M.Sc. in Geology /Geo-physics.
* IITs at Kharagpur, Mumbai, Roorkee and Bhubaneswar have full flagged departments of earth sciences where admissions are made on the basis of JEE results.
* Earth science is a part of BS-MS five year duel degree programme in some of the recently-established IIRSER (Indian Institute of Science Education and Research), particularly in Kolkata, Mohali and Theruvanathapuram.
  1. **Fitness experts/personal trainer**

# There are thousands of people who are passionate about health and fitness and considering a career change. It ia a better option, if they have a degree and they know or learn about the biochemistry, anatomy and exercise physiology. Getting a certificate as a personal trainer may be the other option. Unlike in certain other fields, there are no predetermined paths in fitness. In other words, there is no single or obvious path to becoming a successful health and fitness coach. But, you can create your own unique path to the dream job you want.

* 1. **Flight Attendants (Cabin crew)**
  2. **Food blogging**

# Food blogging represents a complex interweaving of “foodie” or gourmet interest in cooking with those of blog writing and photography. The majority of blogs use pictures taken by taken by the author himself/herself and some of them focus specially on food photography. There are different types of food blogging. Bloggers cook extensively; and from a blog that documents highly authentic recipes or experimental food or just about anything that one is cookin

* 1. **Indian Air Force**
  2. **JOINING THE INDIAN AIR FORCE (Combined Defense Service Exam)**

Eligibility: Bachelor’s in any stream with Math and Physics in Class 12th.

No minimum percentage is specified.

19-23 years age

Only men are eligible

CDS is conducted twice a year (February and August)

Notification appears on the official UPSC Website (<http://careerairforce.nic.in>) as well as in leading dailies and Employment News

**Flying Officer (Pilot) through Short Service Commission**

**Eligibility:**

* Tech. with 60% marks
* 19-23 years
* Only men

**Notification in December and June in Employment News and National Dailies.**

**Direct Entry Scheme as a Flying Officer:**

* Eligibility for Flying Officer is Aeronautical Engineers (electronics) is a B.Tech. with 60% marks.
* 18-28 (if married)---18-25(if unmarried)
* Both men and women are eligible.
* Notification in December and June in Employment News and other national Dailies.
* Aeronautical Engineering deals with Developing. Constructing, Designing, Maintaining and Operating missile and military aircrafts.
* Computer technology is used to enhance the learning process
* Aeronautical Engineering also involves the aerospace Engineering dealing with both aspects of Spacecraft and Aircraft
  1. **Navy**
  2. **Pilot**

**Introduction**

* To become a Commercial Pilot, one must possess CPL (Commercial Pilot License).
* This license is issued after a candidate clears the training program from an institute recognized by Civil Aviation Authority of that country, DGCA in case of India.

**Qualifications**

* 10+2 (PCM)
* Minimum marks: 50%

**Fitness Standards**

* A commercial Pilot has to be fit physically and mentally.
* That’s why during the selection process, lots of emphasis is laid on the medical status of the candidate.
* Here are some medical standards set by authorities, which interested candidates have to satisfy in order to get selected into CPL training program;

1. Class I Medical certificate is needed before joining the CPL.
2. Eyesight specifics—one eye has to have perfect eyesight, without any defects (6/6). It is allowed to have certain imperfections in the eyesight of the other eye (6/9). But, this imperfection should be corrected to 6/6.
3. Candidate must not have any serious physical deformity. Also he/she should not have any kind of mental disorder, or any history of having such mental illness.

In case you have passed 12th Science, you may join the CPL training program if you meet the above mentioned educational and medical standards. You may approach private institutes, fill forms and get started.

Most institutes have a **Pilot Aptitude test,** which a candidate must clear, in order to get selected. The Aptitude test is a **3 stage process** comprising of

1. **Written Examination**
2. **Interview** and
3. **Aptitude Test.**

* The written examination deals with subjects like, **Mathematics, Geography, General Knowledge, English Skills etc.**
* Candidates who manage to clear these two stages are called for the third stage. **Medical examination** is conducted.
* Finally, a merit list is prepared, based on the performance of candidate in each stage of the selection process as well as the medical examination.
* Based on merit, deserving candidates will be selected and trained to become Commercial Pilots.
* Once selected for the CPL training, students with no prior flying experience are given Ab initio CPL training.
* The duration of the entire program may vary from one institute to another.
* On an average, it could last anywhere between 15—18 months
* Most flying schools offer combination of **ground Training** and **Flying Training. Simulator Training** is also given to candidates.
* Ground Training consists of subjects like Air Navigation, Aviation meteorology, Air Regulations, RTR, Aircraft General and technical knowledge.
* Flying Training, at first, will be supervised. A flight instructor will assist and guide the candidate at start.
* To obtain the CPL, a candidate must complete **200 hours** of flight time. This flight time is usually made up of time; as pilot in command; instrument time and flight time by night.
* After clocking the required flying hours, one may apply for CPL.
* After passing the exam held by DGCA (subjects are –Air navigation, Air regulation, Aviation Meteorology, Aircraft technical & General Knowledge and Aircraft Specific Knowledge), successful candidates will be awarded the **CPL.** Passing marks or percentage for these exams held by DGCA are 70%
* Once a candidate completes the training and has the CPL he/she may apply for job at commercial airlines or charter companies.
* But, possessing CPL is not the end of it!
* After getting CPL, you may also have to spend money for type rating.
* Based on the airline that you join and the aircraft you will fly, you will be given specific training (keeping that aircraft in mind). You will be asked to pay expenses of this **type rating** by the airlines.
* Airlines these days prefer pilots possessing the **ATPL** (Airline Transport Pilot License).
* For possessing the ATPL, candidates must have at least 1500 hours of flight time under his/her belt.
* He/she also has to pass 4 of the exams mentioned above.
  1. **Police.**
* **Age—18 to 21 years**
* **Qualifications—**10+2 (from a recognized institution)
* Height—minimum 170 cm
* **Chest**: minimum 81cm to 85 cm (with minimum expansions of 4 cms.)
* **Sub-inspector in DP.**
* **Qualification:** Graduation
* **Selection:** through Staff Selection Commission (SSC) through graduate Level **Examination under central armed police forces** (CAPF) which covers all the Para Military Forces of the Country.

**Career opportunities available in DP**

* Constable
* Ministerial cadre
* Sub-Inspector
* Assistant Commissioner of Police

Recruitment 2019,

Notification—15000 vacancies

Form, apply on line: www.delhipolice.nic.in

10th pass and 12th pass

Age: 18—30 years

All details are available at official website:

delhipolice.gov.in

delhipolicerecruitment.nic.in

height: minimum 165 cm.

chest: minimum: 76 cm (unexpended) &80 cms expended

1. Physical Standard Test (PST)
2. Physical Efficiency Test (PET)
3. Written Examination (OMR based or CBT based)
4. Personal Interview (PI)
5. Document Verification (DV)

**They are required to appear for physical examination, written test and intervie**

* 1. **Railways**
  2. **Skin-care specialist: A Cosmetology Education**

# As an inspiring skincare specialist or esthetician, you need an education, but not a traditional college degree like an associate’s, bachelors or master’s degree. Instead you will need specialized training in the field of professional skincare training school.

* 1. **Stock brokers (Master of trade)**
  2. **System Analyst**

# Most employers require system analyst to have at least a bachelors degree in computer system analysis, computer science, computer information systems, management information systems, business intelligence and the similar fields. they are the big thinkers in IT. These professionals analyze an organization’s current computer systems and procedures, and recommend strategic changes to increase productivity, reduce costs and accomplish other business goals. The system analyst’s prime directive is to maximize the return on investment (ROI) of an organization’s IT spends.

* 1. **Travel planners.**

# If you want to start a successful independent travel agency

# Connect with a host agency. One of the best tips is to connect with a host agency to begin a career as an independent travel agent.

# Make sure that you get the necessary training

# Develop a Niche Market.

# Become the expert

# ,kj,k yyy b Give your customers the service you may want for yourself.

# Khh llih hlh

* 1. **Trends in the insurance Sector**
* According to the Insurance regulatory and development Authority, the premium collected by Indian Insurance increased substantially during last couple of years.
* The Indian insurance industry is bifurcated into many segments, due to which there is an abundance of jobs for graduates.
* It has 52 insurance companies, of which24 are in “Life Insurance” business 28 are non-life insurer.
* Stakeholders in the market include agent (individual and corporate), brokers, surveyors and third party administrators serving health insurance claims.
* Additionally with various innovations catering to the market need, newer jobs are constantly on offer.
* For instance, traditionally, the areas covered under insurance included ,life insurance, pensions and education plans for children.
* However, people can now insure their weddings (against cancellation) as well.
* Beside core insurance functions, there are various job opportunities for fresh candidate in areas such as sale, operations, IT and finance.
* Opportunities that require candidate to identify new channels for expanding insurance and strengthening the existing channels also exist.
* A bachelor’s degree is a minimum requirement to be eligible for insurance kob in India.
* More importantly what companies look for in graduates is a knack to sell.
* Most companies however, conduct an orientation for fresh recruits to acquaint them with how the industry functions and train new employees in the fundamental skillsthey would need on the job.

**17.28 Master of trade (Stock brokers)**

* Stock brokers are involved in buying and selling shares for clients for a commission.
* There are some big brokerage firms, however, who do not restrict themselves just to shares. They offer mutual funds, insurances, currencies, and other financial products as well.
* Fresh Graduates/post-graduates get jobs as assistant relationship managers (ARMs) and relationship managers (RSM).
* They are required to be in constant touch with the clients, inform them of market movements and advise them on the amount of risk they should take.
* Becoming a sub-broker or a franchise of a big brokerage company is an option.
* As a sub-broke you will need to deposit a certain amount of money depending on the volumes you plan to handle.
* It is not easy to become a full-fledged broker, as the card which allows you to trade is quite expensive.

**Getting there**

* Most brokerage firms hire ARMs and RMs from noted MBA institutes.
* In addition to your business degree, you could arm yourself with certificates such as National Stock Exchange’s certification in financial markets and the Bombay Stock Exchange certification on derivatives exchange.

**Institutes and ORLS**

* BSE Training Institutes Mumbai ([www.bseindia.com](http://www.bseindia.com))
* National Stock Exchange Mumbai (nseindia.com)
* Institute of Company Secretaries of India, New Delhi ([www.icsi.edu](http://www.icsi.edu))
* Institute of Chartered Accountants of India, ND ([www.icai.org](http://www.icai.org))
* **Skills/traits**
* You should understand the pulse of the Sensex and Nifty.
* Trust and integrity, otherwise you can hurt the client’s prospects and the Company’s reputation.
* You deal with people’s life savings, so giving the right advice is critical.

**Pros and cons**

* The Stock Market is directly connected with economic growth, so higher GDP means higher salaries.
* One mistake can cost clients heavy, so pressure is high.
* The work can affect family life.

**The payoff**

* A relation manager with an MBA in finance can draw 6 lakhs or more depending on the firm.
* Non-finance RMs earn less.
* A good RM can rise to become a team leader, a zonal manager of a branch.

**Job Opportunities in Humanities**

1. **Teacher**
2. **Advertising Sales Agent**
3. **Technical Writer**
4. **Artist**
5. **Counselor**
6. **Event Organizer**
7. **Public Relation Manager**
8. **Travel Agent**
9. **Lawyer**
10. **Editor**
11. **Museum Worker/Curator**
12. **FBI Agent**
13. **Genealogist**
14. **Advertising Manager**
15. **Foreign Correspondent**
16. **Human Resource Specialist**
17. **Linguist**
18. **Civil Services**
19. **Police**
20. **Indian Armed Forces**
21. **Civil Services**

**(IAS, IPS, IRS, IRS, etc. Conducted by UPSC)**

1. **Army, Navy and Air-force.**
2. **Police.**
3. **Education-**
4. **Master’s Degree programs in Human Resources**
5. **PG IN HUMANITIES**
6. **And many more opportunities in different fields**

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* **IIT Delhi**
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* **And others**
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* **Centre for Civil Aviation Training (CCAT), ND**

**(Approved by DGCA)**

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

**Foreign destinations**

**Gap year**

* Taking a year off gives the freedom to experience different fields.
* Make a list of all the things you find interesting and priorities.
* Make a proper schedule for the day for maximum utilization of time.
* Join an online course for free.
* For intern ship opportunities visit any of the above web site.
* Pursue a hobby of your choice.
* Travel and meet the people from varied background.

**CAT**

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

The common admission test (CAT) is a computer based test held in India… the Indian Institute of Management (IIMs) started this exam and use the test for selecting students for their Business Administration Programs. The test is conducted every year by one of the IIMs based on the policy of rotation.

* CAT aspirants should make planned efforts to maximize their chances of cracking it.
* The first task of any aspirant is to complete the basics in all the test areas at the earliest possible but preferably not later than 30 days before they take the CAT.

**Basics include**

**Quantitative Ability:**

Quant:

* arithmetic, basic algebra, geometry and mensuration, and modern maths

Data Interpretation:

* Tables, line, bar and pie charts, routes and networks etc.
* After the basics students should focus on solving questions that require application of the knowledge under severe time pressure.
* They should also practice to built skills in using alternative methods to solve questions like option judging, elimination of unlikely options, substitution of numerical values etc.
* They should also build speed by solving questions using mental calculations and visual observation.

**Verbal ability**

Logical Reasoning:

* Calendars, clocks, cubes, syllogisms, Conditional Statements, Venn Diagrams, Maxima-Minima, Binary Logic, Games and Tournaments, Logic Puzzles, etc.

**English Grammar basics:**

* Reading, comprehension (RC)- reading on various different subjects on line.
* Vocabulary: consulting the dictionary regularly to know the contextual usage of unfamiliar words/usage.
* Data interpretation and logical reasoning areas are skill-intensive.
* Hence practice and more practice will help you to sharpen your skills.
* Verbal areas require you to have strong fundamentals in grammar.
* A good vocabulary and a varied reading habit are a must to do well in RC.
* This is also an area where you may get into trouble due to more wrong answers and negative marks, so you have to be on your guard.
* Once your basics are more or less in place, you should take plenty of mock tests that are similar to the CAT and are taken by a large number of students.

**Mock tests play a crucial role in**

* Understanding your relative strengths and weaknesses vis-à-vis other test takersso that you can work on the same and improve.
* Fine tuning your time management and question identification skills that help you to attempt maximum possible questions.
* Understanding the reasons behind your mistakes so that you do not repeat these again.
* Developing stamina and temperament for a 140-minute computer based CAT.
* Use the last one month before the CAT to take and thoroughly analyze your performance in each mock test so that you are ready to take the actual test confidently.

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

**On line course for free**

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

**CMAT: The Second Most Important Test after CAT**

* The common Management Admission Test (**CMAT**) conducted by All India Council for Technical Education, has become the second most important test after the CAT for MBA aspirants.
* First conducted in Feb, 2012 CMAT is a computer based multiple-choice, objective-type test that takes place twice a year. As per the latest XAT exam pattern, the exam will be on line based with a time period of 3.5 hours. From academic year 2020-21 onwards, the CMAT exam will be conducted only once a year in January.
* CMAT has replaced a large number of state entrance tests in states such as U.P. (UPSEE), Kerala, Maharashtra (MCET), Rajasthan (RMAT) etc. scores will be used by more than 2000 B-schools in India including top b-schools like Jamnalal Bajaj, Mumbai.
* CMAT is a 180-minute test having 100 questions divided into 4 sections;

1. Legal reasoning
2. Verbal ability
3. Numerical ability- data interpretation
4. General awareness

* Each section includes 25 questions, each with 4 options, the right answer will get you 4 marks while 1 mark is deducted for each wrong answer.
* While CMAT syllabus is similar to CAT, except general awareness.
* It is perceived to be relatively easier test than the latter.
* Good preparation for general awareness is a must to get a good score.

**Examination Required to Study in US**

**SAT**

Introduced in 1926, its name and scoring have changed several times

* **Originally called: Scholastic Aptitude Test,** later
* **Scholastic Assessment Test:**
* **Then SAT reasoning Test,** and now simply the **SAT.**
* It is needed for admission to most US Colleges.
* A few colleges in Singapore and Canada.
* SAT consists of **writing, critical reading,** and **Math.**
* Maximum score for this exam is 2400.
* A separate writing section on 12 is also a part of the exam.
* You can take the SAT as many times as you like and send only your best score.
* To register for SAT visit, [www.collegeboard.com](http://www.collegeboard.com)

**TOEFL**

* Test of English as a Foreign Language.
* An under graduate and graduate exam needed by almost all students who wish to study abroad.
* Designed to measure the English proficiency of non-English speaking people
* Divided into 3 sections, it tests the reading, listening, writing and speaking skills.
* Although the exam is primarily needed by US universities, many universities in UK and Canada recognize the TOEFL.

**GRE**

* **GRE** stands for **Graduate record Examination.**
* It is needed for admission to most non-business programmes in the US.
* Some institutes in UK (such as London School of Economics) also need the GRE.
* Many business schools around the world have now begun to accept the GRE.
* The section of the exam include xerbal and quantitative reasoning and an analytical writing section. Maximum points for the exam are 340 and most top graduate schools expect candidates to have scores over 320 to be considered for admission (writing section is scored separately for 6). Students can log on to [www.gre.org](http://www.gre.org)

**GMAT**

* It stands for **Graduate Management Admission Test.**
* Needed for admission to almost all top business schools.
* It consists of English and Math and tests the analytical and logical skills.
* The sections of the exam include verbal and quantitative reasoning, analytical writing and an integrated reasoning section.

**AP**

* **AP** stands for Advance Placement
* These are the tests that allow a person to get college credit for taking (and passing) the test.
* They are put out by a company called the College Board.
* It is the same company that puts out the **SAT** test.
* A score of 3 or higher is generally considered good and 5 is especially impressive since it is the highest score.
* It comprises university level courses and exams, which can be taken by secondary school students to prepare for university level study in 34 subjects.
* More than 18,000 schools in 115 countries offer the AP courses and exams, where students can take college-level courses while they are still in school.
* They are better prepared for college, especially because they develop critical thinking skills through these courses.
* A student must be under 21 years of age at the time of exam.

**Curricular Practical Training (CPT)**

* lets you take advantage of working full-time in a professional organization during vacations or for a semester or two during your degree closely supervised by teaching faculty.

**Optional Practical Training (OPT)**

* Allows you to work in US for the duration of 12 months in the area of your specialization after the completion of your degree.
* Students graduating in science, technology, engineering and math (STEM) may extend OPT up to an additional 17 months.
* In addition to CPT and OPT, students on the F1 visa are permitted to work on campus for 20 hours per week.

**Entrance test, XAT, ATM or IITTM**

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

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

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

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

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

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

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

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

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

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

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

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

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