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The Tribune GUIDE TO BEST COLLEGES Science

There is no dearth of courses and opportunities for students in the science stream. You just have to select the field that matches your natural talent as professionals with a science background are always in demand

The Science of Success



MOHAN PRASAD

AKING up Science after Class X is a decision that is quite rewarding for students mainly because science students have the option of switching career streams easily later on. If you have taken up physics, chemistry, maths and/or biology in Class XI, then you are not only eligible to apply to engineering streams, medicine, nursing, physiotherapy, occupational therapy, nutrition and dietics, veterinary sciences, audiology, architecture etc, but can also apply for courses like literature, sociology, psychology, economics, history, commerce, political science, geological sciences etc. Science students can also take up mass communication, photography, cinematography, law, etc.

BSc not a poor choice

There are a lot of misconceptions among students as well as parents when it comes to choosing BSc after Class XII. The most common misconception is that a BTech (engineering) degree is better than BSc (pure science) because BTech is a professional degree that allows the student to gain expertise in the area of his interest faster than a student who graduates in pure sciences. BSc is also considered to be an easy choice or the road taken by those who fail to get into engineering or medical colleges. This is not completely true as both the options have their merits and de merits.

A student can complete graduation in Science in 3-4 years. Some universities also offer specialised (honours) courses like BSc (Honours) zoology/ botany/physics/chemistry/computer application/applied sciences/ physical sciences etc where the students get to specialise in the subject of their choice.

Other universities offer a general overview of all the science subjects in this degree, giving the students freedom to apply for a master's course to specialise in the subject that interests them he most. The curriculum is broad and mainly theoretical. If the student is more inclined towards the non-technical aspects of a subject and wants to go for further research studies in science, then BSc. is a good way to start. You can opt for a master's course and then enrol for a Doctoral programme. Alternately, you can also enrol into MTech or ME programme after graduation.

Add an extra punch to your degree

Specialisations are the key to financial success in careers today. Therefore, you must



BPharma

Pharmacy is one of the main disciplines under pharmaceutical and biomedical science industry. Pharmacists are responsible for the preparation, dispensing and appropriate use of medication and provide services to achieve optimal therapeutic outcomes. Generally the job of the professionals in this field is to prepare, mix, compound or dispense drugs and medicines, ointments, powder, pills, tablets and injections on the prescription of a medical practitioner, dentist or veterinarian. Those who are engaged in research, particularly in this area, concern themselves with synthesis of new drugs, clinical testing of the effects of such drugs on animals and humans, and obtaining the required licenses from the drug-control authorities.

Colleges imparting pharmaceutical education must be approved by All Indian Council of Technical Education (AICTE) or Pharmacy Council of India (PCI). For a student to be eligible for registration as a pharmacist in India, the college from which he/she graduated must be approved by the Pharmacy Council of India.

How to get in To go for a BPharmacy course, one need to pass in Class XII with a minimum aggregate of 50 per cent in physics, chemistry and biology. Candidate must additionally have passed English as a subject of study (core or elective) in the qualifying examination. The duration of a BPharma course is four years and a diploma programme is of two-year duration. In some states it is mandatory to take an additional pharmacy entrance examination in order to be eligible for the course.

Where to study

NIPER, Mohali (www.niper.nic.in) Delhi Institute of Pharmaceutical Sciences and Research. New Delhi (www.du.ac.in) University Institute of Pharmaceutical Sciences, Panjab University, Chandigarh (http://puchd.ac.in/) Lovely Professional University, Jalandhar

> (www.lpu.in) Guru Nanak Dev University, Amritsar

Hansraj College, **New Delhi**

www.hansrajcollege.co.in Seats: 340

Cut off: 95 per cent

USP: One of the largest constituent colleges of Delhi University this college is ranked among the top 10 colleges in the country. One of the few colleges in the country to posses an indoor badminton court and a stateof-the-art indoor shooting range.

DAV College,

Sector 10, Chandigarh www.davchd.com

Seats: B.Sc. (Med., Non-Med., B.Sc. (Hons) Bio-Informatics - 25; B.Sc. (Hons) Bio-Technology - 25

USP: The college offers a range of science courses especially in biotechnology, bioinformatics etc in the region.

Government College for Girls,

Sector 11, Chandigarh

www.gcg11.org Seats: 300

Cut-off: 70 per cent

USP: Grade A Grade by the National Assessment and Accreditation Council (NAAC).

PG Government College For Girls, Chandigarh

www.gcg42.ac.in

Seats: BSc (Non -Medical) 160; Medical- 120; Biotechnology - 30; Biotechnology -40; Bioinformatics - 30; Microbiology - 30; Computer Science - 40

Cut-off: Biotechnology (61.6% UT Pool; 86.6% General Pool); USP: First city-government college to start PG course in science. The only college in the city to have Functional Hindi Language Lab. Wi-Fi Campus.

Multani Mal Modi College, **Patiala**

http://www.modicollege.com Seats: B.Sc (180), B.Sc (Bio-tech) 40; Cut-off: Over 60 per cent **USP:** The college is conferred with the status of "College for Potential of Excellence" by UGC.

Government Mohindra College,

Patiala www.mohindracollege.in Seats: 240 (BSc medi and non-med) Cut-off: 60 per cent USP: The Ministry of Scie Technology has recognised the institute as "Star College in Life Sciences". The Punjab Government has selected the institute as Community College to impart skilloriented education.

constantly update your knowledge base by taking up a course that will add weight to your resume and to your knowledge. BSc and gain some technical knowledge in the field to be a cut above the rest.

However, if you feel that a simple BSc is not your cup of tea then there are a number of professional courses other than medical and engineering that science students can opt for. Some major ones worth having a look at are:

Nanotechnology

Nanotechnology is the study of functional systems at the molecular scale. This new sphere of scientific innovation has a broad scope. Several institutes have introduced degree courses in Nanotechnology at both the UG and PG levels. The areas covered in nanotech are Food and Beverages, Bio-Technology, Forensic Sciences, Genetics, Space Research, Environment industry, Medicine, Agriculture and Teaching. Nanomedicine is the most important field of Nanotechnology. Nano level gadgets and materials are being used for diagnosis and treatment of diseases. Nano-pharmacology has generated a specific category of smart drugs with negligible side effects. The use of nanotech has also helped in the detection of narcotics and fingerprints of the suspected criminals.

The Council of Scientific and Industrial Research, also known as CSIR has set up

Meteorological Sciences

Meteorology is a sub-discipline of atmospheric science that mainly focuses on various aspects of the atmosphere, especially that of the weather and climate. Those who specialise in the field of meteorology are called Meteorologists or Climatologists or Atmospheric scientists.

Meteorology as a career deals with study and research of the atmosphere, prediction of the weather, identification and interpretation of climatic trends etc. As such, the field of meteorology includes both weather and climate and is concerned with the physical, dynamical and chemical state of the Earth's atmosphere and interactions between the atmosphere and the Earth's surface. There are three aspects of meteorology - observation, understanding and prediction of weather. Career aspirants in this field must be good at mathematics and



Looking at the progressive prospects of Nanotechnology in India, Nanobiosym Inc., a US-based leading nanotechnology firm is planning to set up India's first integrated nanotechnology and biomedicine technology park in Himachal Pradesh.

Biotechnology

This research-oriented field is a blend of biology, mathematics, physics, chemistry and engineering principles. Most of the work is carried out at research institutes and laboratories.

The eligibility criterion for getting into an undergraduate programme varies from one institution to another. In some colleges the eligibility criteria includes a Plus II with 50 per cent marks in physics, chemistry, biology and mathematics. In some other institutions, the Plus II pass percentage required is 55 per cent. While some colleges consider physics, chemistry and biology combina-

tion of subjects as a basic entry level qualification, others take into account the physics,



science. A course in meteorology will help in the development of various skills like data collection, data analysis, forecasting and computer modelling. Subjects covered by a course in meteorology include Fundamentals of Meteorology, Global Atmosphere, Weather Measurement & Analysis, Atmospheric

chemistry and mathematics combination. Once this eligibility criterion is met, you can get admission into the BSc programmes. Once you have earned a graduate degree in this field you can go for the master's level (MSc, ME, MTech). A graduate degree in subjects such as biochemistry, biology, botany, chemistry, microbiology, pharmacy, veterinary sciences or zoology is acceptable for entry into a post-graduate programme

in biotechnology. Apart from undergraduate programmes, many colleges and universities offer five and five-and-a-half year integrated programmes (BTech/MTech) for students. It should be kept in mind that a post-graduate qualification in biotechnology is a must to enter the profitable and ever-expanding field of biotechnical applications.

Microbiology

It is the study of living organisms which can be a cell cluster, single cell or may be no cell at all; these are invisible to naked eye such as fungi, bacteria and viruses. Medical microbiology is the most popular field as it deals with the human illness. There are ample career opportunities and jobs for microbiologists in pharmaceutical, food, research and development laboratories in hospital, beverage and chemical industries, research organisations, agriculture and healthcare research. Graduation level

Thermodynamics, Atmospheric Physics, Weather Analysis and Forecasting, Marine Meteorology etc. A number of universities including IITs are offering undergraduate and postgraduate programmes in Meteorology/Atmospheric Sciences. The students with physics, chemistry and mathematics and biology in Class XII are eligible for getting into a BSc course. The bachelor's degree is of four years' duration. Besides this a diploma in meteorology is also offered by some institute. Master level programmes are of two-year duration. Candidates aspiring to become researchers and scientists must complete a PhD in meteorology.

Where to study

Indian Institute of Tropical Meteorology, Pune (www.tropmet.res.in) IIT. Delhi

courses include BSc in Microbiology, Diploma in Clinical Microbiology, Diploma in Clinical Pathology, Diploma in Industrial Microbiology etc.

Zoology

It deals with the study of living and extinct animals their evolution, structure, behaviour, function and interaction with environment. One can become zoologist, lecturer, ornithologist and even wildlife expert after getting a BSc in this branch of science. Those interested in zoology can opt for BSc in Zoology, Aquaculture (Fishery Microbiology), Advanced Zoology and Biotechnology and Animal Biotechnology.

Dairy Sciences

Students who have completed Plus II with physics, chemistry and mathematics as optional subjects are eligible to choose a BSc or BTech programme in dairy science. The selection in the BTech course is based on the rank obtained in the common entrance examination.

A professional degree programme like BTech. in dairy technology or dairy science and technology offers intensive training in milk processing and quality control, and engineering aspects of dairy processing equipment. The course duration is four years.

Students who complete their B.Tech. degree in dairy technology can go for Master's degree in dairying. The course offers intensive training in various aspects of production, processing and management. National Dairy Research Institute (NDRI), Karnal, Haryana, is a leader in research and education in the field of dairy science and technology. It offers B.Tech. in dairy technology, and master's and Ph.D. programmes in dairying. Some state universities and a few institutions also offer B.Tech. or BSc. Dairy Science and Technology courses. Among them, the National Dairy Research Institute (Karnal and Bangalore) and the Sheth MC College of Dairy Science (Anand) have been identified as centres of excellence.

In most states, admission is made on the basis of entrance examination. The eligibility requirement is a pass in Plus II with minimum 50 per cent marks in physics, chemistry and mathematics.

- The writer is IIT-JEE Expert, Meritnation.com

Khalsa College, Amritsar

khalsacollegeamritsar.org

Seats: B.Sc. (Med, non med); BCA (150); B.Sc. (Food Sc. and Tech.)40; B.Sc. (Biotechnology)40; B.Sc. (Hons.) Agriculture 70; Bachelor of Physiotherapy 40;

Cut-off: 70 per cent

USP: NAAC re-accredited 'A' Grade (CGPA), College with Potential for Excellence' Status Conferred by UGC.

Government College,

Ludhiana www.scdgovtcollege.org

Seats: B.Sc Med (120), Non Medl (180)

Cut-off: Over 60 per cent

USP: One of the oldrst colleges in Punjab it has produced eminent personalities including Sahir Ludhianvi, K.P.S.Gill, film producer David Dhawan and Kapil Sibbal.

Pt Neki Ram Sharma Government College, Rohtak

www.nrs.com Seats: 580

Cut-off: 70-80 per cent **USP:** The college has produced

eminent personalities, including Haryana Chief Minister Bhupinder Singh Hooda, martyr Lt Kuldeep Singh Rathee and ex-state DGP P.C. Wadhwa.

D.A.V PG College, Dehradun

www.davpgcollege.com Seats: 1300 Cut Off: 60%

USP: One of the oldest Colleges in Dehradun and has strength of 30,000 students in the ongoing session.

(Based on selected lists from India Today, Outlook and other national surveys)



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