Hello Student,

Greetings from Univariety!

There are a host of career options after Science stream with biology. They are as follows -

1. Botany

It is a well-established branch of biology that involves the study of plants, their structure, processes, growths, etc. Those in the field of Botany conduct research and observation to discover new species, study the interactions of plants with different organisms in their environment, genetic formation of plants, etc.

Career Opportunities: With a degree in Botany, you can work in landscape industries, natural resource centres, environmental consultancies, or as a researcher, teacher/professor, taxonomist, horticulturist, nursery manager, and environmental consultant.

Some Top Colleges: Delhi University (Various Colleges), St. Xavier’s College, Loyola College, St. Teresa’s College, Stella Maris College, Fergusson College, Mount Carmel College, Christ University, Presidency College, St. Joseph’s College

2. Zoology

This exciting field involves the study of the animal kingdom. Zoologists analyse the structure, life processes, genetics, physiology, classification and interactions of various species in detail by observing animals in their natural habitats as well as laboratories.

Career Opportunities: With a degree in Zoology, you can find work as a researcher, animal breeder, wildlife rehabilitator, wildlife biologist, zoo curator, conservationist, teacher/professor in schools and colleges, etc.

Some Top Colleges: Xavier’s College, Presidency College, St. Albert’s College, Oxford College of Science, Delhi University (Various Colleges), Loyola College, Christ University, Madras Christian College

3. Microbiology

It is the study of microscopic organisms such as bacteria, fungi, viruses etc. and their interactions with humans, animals, plants and other organisms in the environment. Microbiologists research and investigate how different microorganisms affect our lives. It consists of various subfields such as virology, bacteriology, parasitology, mycology etc.

Career Opportunities: Typical employment opportunities include clinical researcher, research scientist, lab technician, quality control, working in pharmaceuticals, health sector, food industries, breweries, distilleries, agriculture, etc.

Some Top Colleges: Delhi University (Various Colleges), The Oxford College of Science, Madras Christian College, Fergusson College, Ethiraj College for Women, Osmania University, Panjab University

4. Biochemistry

It is a branch of science that involves the study of chemical processes and substances which occur within living organisms. It is a laboratory-based science that brings together biology and chemistry, as biochemists solve biological problems through concepts of chemistry. Examples of work include improving the process of photosynthesis to improve crop yield, discovery and development of new chemical process to produce biofuel, etc.

Career Opportunities: Since it is a growing field, you can find numerous exciting opportunities such as biomedical scientist, forensic scientist, clinical laboratory technologist, toxicologist, research scientist, healthcare scientist, pharmaceutical sales representative, consultant, patient care coordinator, lab technician, medical coder, teacher/professor, etc.

Some Top Colleges: Delhi University (Various Colleges), St. Xavier’s College, Presidency University, Banaras Hindu University, Aligarh Muslim University, Fergusson College, Christian Medical College, The Oxford College of Science

5. Environmental Science

Environmental science is an essential field in the current world, and involves the study of the physical, chemical and biological components of the environment and their interactions. Environmental scientists investigate environmental issues such as global warming, ozone depletion, waste management, water pollution, etc., and how these issues can be dealt with.

Career Opportunities: Environmental scientists are hired for research and other roles by various industries such as mines, water-treatment plants, fertiliser plants, etc. and different government departments and agencies such as forestry, pollution control board, agriculture, etc.

Some Top Colleges: Delhi University (Various Colleges), Fergusson College, Mount Carmel College.

You should note that environmental science as a specialisation in India is offered mostly at the postgraduate level.

6. Genetics

This interesting field involves the study of genes and their functions, genetic variations and heredity of living organisms. Professionals in this field study genetic diseases, anomalies, traits, mutations, how genes are transmitted, interactions of genes with their environment, etc. Geneticists can apply their knowledge to as diverse areas as treating patients with genetic anomalies, to developing pharmaceutical products.

Career Opportunities: Jobs related to genetics include becoming a geneticist, immunologist, cytogeneticist, forensic DNA analyst, medical technologist, geneticist, pharmacologist, clinical research associate, research scientist, etc.

Some Top Colleges: The Oxford College of Science, Osmania University, Guru Nanak Dev University, Kurukshetra University, Bangalore City College, Institute of Genetic Engineering

However, there are not many excellent universities in India offering this stream in India, thus, it is preferred to pursue your education abroad as there are better educational and career avenues for genetics.

7. Bioinformatics

This field combines together biology, computer science, and information technology. Professionals in this field work on developing and using tools and techniques for analysing biological data. For example, a bioinformatics professional might develop a software for accessing and analysing data from biomedical and pharmaceutical studies.

Career Opportunities: You can work as a bioinformatics analyst or a developer with pharmaceutical and biotechnology companies, healthcare organisations, pharmaceuticals and with research agencies after graduating from this field. You can also work as a clinical research associate, bio analyst, or as a medical coder.

Some Top Colleges: The best institutes for this course offer specialisation at the postgraduate level. Some of them include – Panjab University, Stella Maris College, Bangalore University, Mumbai University, All India Institute of Medical Sciences, SavitribaiPhule Pune University, Institute of Bioinformatics and Applied Biotechnology, University of Delhi, etc.

8. Physiology-

It is the study of bodily functions, activities and mechanisms of living organisms, especially humans. Physiologists generally study a wide variety of topics including organs, anatomy, cells, biological compounds, and muscles, and how they interact and work together to keep the body functioning. In addition to studying human physiology, there are other branches of the field, including plant physiology, cellular physiology, microbial physiology, etc.

Career Opportunities: Professional opportunities in this field include working as a clinical-exercise physiologist, biomedical scientist, physiotherapist, sports physiologist, researcher, teacher/professor etc.

Some Top Colleges: Presidency College and Presidency University. Master’s courses are offered by Manipal University, University of Madras, and University of Calcutta

9. Marine Biology

It is a field of knowledge involving the study of marine organisms, including their behaviour, and interactions with the environment. Another related career to this is Fishery Science. The field of marine biology is quite diverse, and there is no single job by the name of “marine biologist”, and this title can be held by any professional closely involved with marine life and organisms.

Career Opportunities: You can find work as an aquaculturist, fishery biologist, environmental consultant, researcher, etc.

Some Top Colleges: Indian Maritime University, University of Madras, Pondicherry University, National Institute of Oceanography

10. Biotechnology

It is a field that combines biology and technology. It utilises living organisms such as cells and bacteria in the industrial process. Biotechnology professionals work on different areas to improve our life, including developing cleaner and safer fuels, improving crop yields, improving the production of food items, developing drugs to deal with deadly diseases, etc.

Career Opportunities: You can go into pharmaceuticals, healthcare, genetics, or clinical research. Many government and private industries in the fields of agriculture, animal husbandry, nutrition, cosmetics, marine biotechnology, environmental conservation and waste management, etc. hire candidates with degrees in biotechnology. You can also work in sales and marketing, quality control, administration, or as a laboratory assistant or a field technician.

Some Top Colleges: Fergusson College, Loyola College, Presidency University, Christ University, Mount Carmel College, Madras Christian College, Jawaharlal Nehru University, JamiaMiliaIslamia, Manipal University

11. Biophysics

This field combines the principles of Physics with those of Biology. Biophysicists study organisms at the cellular and molecular level using the methods and approaches of Physics. It is an advancing field, involving state-of-the-art technology, physical measurements and computational models.

Career Opportunities: Jobs in this field include becoming a nuclear medical biophysicist, clinical biophysicist, forensic biophysicist, nutritional biophysicist, professor, etc. A prime career avenue is research, and you can find work as a research scientist in various government and private organisations.

Some Top Colleges: University of Madras, University of Mumbai, Panjab University, All India Institute of Medical Sciences (AIIMS), Aligarh Muslim University

12. Biomedical Science

It is an applied science that combines different aspects of different disciplines to develop interventions, technology and knowledge in the domain of health care. Biomedical scientists work to study how cells, organs, and processes function in the human body, and thus, their work is applied to the understanding and treatment of diseases.

Career Opportunities: The knowledge and skills gained in this career allow you to work as a biomedical scientist, clinical researcher, forensic scientist, toxicologist, immunologist, and other healthcare professions. It is a relatively new, yet fast-expanding field in India.

Some Top Colleges: University of Delhi and Symbiosis International University. Some institutions offering the course at postgraduate level include Dr. B.R Ambedekar Centre for Biomedical Research, Vellore Institute of Technology, University of Madras, BITMesra, J.J College of Arts and Science, and JamiaMiliaIslamia

13. Food and Agriculture

This is a wide domain consisting of various fields related to the understanding of biological and chemical processes that affect plants, dairy, and the production of food. It includes fields such as food science & technology, agronomy, horticulture, dairy technology, agricultural engineering, etc.

Career Opportunities: The career paths and opportunities for each of these careers are very vast. Some commons ones include, process development scientist, product development scientist, agricultural consultant, agricultural manager, research and development, etc. Other opportunities are specific to the particular career, such as horticulturist, floriculturist, food technologist, dairy technologist, soil Scientist, plant scientist, animal nutritionist, etc.

Some Top Colleges: Acharya NG Ranga Agricultural University, GovindBallabh Pant University of Agriculture and Technology, Mahatma PhuleKrishiVidyapeeth, Andhra University, Anand Agricultural University, Sam Higginbottom Institute of Agricultural Technology and Sciences, Indira Gandhi Agricultural University, Birsa Agricultural University, Tamil Nadu Agricultural University, MaharanaPratap University of Agriculture

14. Allied Medicine-

If you are really keen on pursuing a Medical career, yet don’t wish to go down the challenging road of an M.B.B.S, then the Allied Medicine domain could be the one for you. This is again a wide domain that consists of different healthcare careers that are distinct from doctors, yet assist doctors in their work . These include a wide range of careers such as Physiotherapy, Audiology, Occupational Therapy, Medical Lab Technology, Clinical Research, Radiology, etc. The career paths, colleges and opportunities for each of these careers are very vast.

Career Opportunities: The career opportunities for each of these careers pertain to the specific field, hence are very vast. A common workplace for most of these careers are hospitals. Additionally, pathology labs are a prime workplace for medical lab technologists, while, physiotherapists and occupational therapists can work in clinics or can even set up their own private practice. Radio technicians and optometrists work closely alongside doctors to facilitate their work. Clinical Researchers essentially work on research projects in laboratories of hospitals, pharmaceuticals and universities. Occupational therapists work on a one-to-one basis with clients and patients at various NGOs, special schools, social service departments, etc. The roles of public health administrators are more related to management and administration of hospitals and health-care systems, and they work mainly with hospitals, government organisations and NGOs.

Some Top Colleges: AIIMS, JamiaHamdard University (Optometry); Tata Institute of Social Sciences, Indian Institute of Public Health (Public Health Administration); Christian Medical College, All India Institute of Physical Medicine and Rehabilitation (Occupational Therapy); Indian Institute of Clinical Research, Asian Institute of Health sciences (Clinical Research); Christian Medical College, Kasturba Medical College (Radiology); Maulana Azad Medical College, Armed Forces Medical College (Audiology); Post Graduate Institute of Medical Education and Research, Pt. Deen Dayal Upadhyaya Institute for Physically Handicapped (Physiotherapy).

Hope this information was helpful. In case you have more queries you could reach out to us.

Regards,

Prardhana

Team Univariety

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