

## LIFE SCIENCES & HEALTH

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### Agriculture/Land Management

This field is a combination of modern technology with nature studies. It involves research, analysis and implementation of various techniques to increase productivity and conserve resources. Agriculture and Land management is a constantly developing field and offers some of the highest paid jobs due to its need for flexibility.

#### **Standard MAP Profile:**

**Motivation:** Physical, Experimenting, Art

**Aptitudes:** Spatial, 3-D, Visual, Figurework

**Personality:** Deliberate, Imaginative, Passive, Solitary

#### **Secondary School subjects required:**

Chemistry

Geography

Biology

#### **Where do they work?**

Research institutes, Agriculture based companies, Commercial Firms, Government and individually.



This cluster is further segmented into the following:

**Agribusiness Management:** Focuses on the managerial functions performed by organizations throughout the food system.

**Agriscience:** Provides a foundation for careers in agriculture and natural resources industries

**Resource Development and Management:** Focuses on policy analysis, planning, evaluation, budgeting, and program management.

**Packaging:** Focusing on food packaging, health care and pharmaceutical packaging and industrial packaging.

**Horticulture:** Focuses on the science and art concerned with culture, marketing, and utilization of high value, intensively cultivated fruits, flowers, vegetables, and ornamental plants.

**Forestry:** Focuses on the science and art of managing natural resources that occur on forest lands

**Food Science:** Focuses on the development of new foods, investigation of new production and processing methods, and research ways to insure a safe, nutritious, and economical food supply.

**Fisheries and Wildlife:** Focuses on environmental management, conservation, and wildlife ecology and management.

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## Bio Sciences

Bio Sciences is a vast field encompassing various streams. It is a field of applied biology that involves the use of living organisms and bioprocesses in engineering, technology, medicine and other fields requiring bio products. Modern use similar term includes genetic engineering as well as cell and tissue culture technologies.

### **Standard MAP Profile:**

**Motivation:** Experimenting, Organization, Physical

**Aptitudes:** Visual, Numeric, Verbal, Figurework

**Personality:** Factual, Solitary, Deliberate, Passive

### **Secondary school subjects required:**

Biology

Chemistry

Mathematics

### **Where do they work?**

Laboratories, Research and Development Institutes, Government Institutes, Private Research Companies, Medicine industry and Individually.

The various segments are:

**Bio Technology (Life Sciences):** It refers to the use of living organisms or their products to modify human health and the human environment.

**Bio Medical Sciences:** the application of the principles of the natural sciences to medicine

**Medical Genetics:** Medical Genetics is the specialty of medicine that involves the diagnosis and management of hereditary disorders

**Biophysics:** Biophysics, also known as biological physics, is an interdisciplinary science that applies the principles of physics and chemistry and the methods of mathematical analysis and computer modelling to understand how the mechanisms of biological systems work.

**Forensics:** Forensics is a science dedicated to the methodical gathering and analysis of evidence to establish facts that can be presented in a legal proceeding.

**Biomedical engineers:** Biomedical engineers apply engineering and scientific methods to find solutions to problems in medicine and the life sciences.

**Bioinformatics:** Bioinformatics is an emerging discipline at the convergence of computing and the life sciences and is aimed at development of technologies for storing, extracting, organising, analysing, interpreting and utilising this information.

**Genetics:** Life scientists examine the anatomy, physiology and biochemistry of humans, animals, plants and other living organisms to better understand how living organisms function and interact with each other and the environment.

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## Chemistry

In simplest terms, chemistry is the science of matter. Chemists study and apply the physical and chemical properties of substances to determine their composition, to develop new substances, processes and products, and to increase scientific knowledge.

### **Standard MAP Profile:**

**Motivation:** Experimenting, Physical, Organization

**Aptitudes:** Visual, Numeric, Precision and Figurework

**Personality:** Factual, Deliberate, Passive, Solitary

### **Secondary school subjects required:**

Mathematics

Chemistry

ICT/ Computer Science

### **Where do they work?**

Research and development, Production, Marketing and sales, Management, Government Institutes, Hospitals and Medical Institutions.

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A few segments are:

**Pharmaceuticals:** It involves the development, produce and marketing of drugs licensed for use as medications.

**Oceanography:** the branch of science dealing with physical and biological aspects of the oceans

**Metallurgy:** Metallurgy the study of the physical and chemical behaviour of metallic elements.

**Geochemistry:** Studying the chemistry of earth materials.

**Agrochemistry:** Agricultural chemistry is the study of both chemistry and biochemistry which are important in agricultural production

**Chemical Engineering:** Chemical engineering largely involves the design, improvement and maintenance of processes involving chemical or biological transformations for large-scale manufacture.

**Bio Technology (Life Sciences):** It refers to the use of living organisms or their products to modify human health and the human environment.

**Forensics:** Forensics is a science dedicated to the methodical gathering and analysis of evidence to establish facts that can be presented in a legal proceeding.

**Analytical/Clinical Chemistry:** Analytical chemistry is the science of obtaining, processing, and communicating information about the composition and structure of matter.

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## Ecology & Environmental Sciences

Ecology and Environmental science is collectively broad cluster of various careers which are linked to the study of the environment and its components. It is very vast which provides various areas of specialization depending on the area of interest.

### **Standard MAP Profile:**

**Motivation:** Experimenting, Physical Social

**Aptitude:** Visual, Numeric, Precision, Spatial, 3D, Figurework

**Personality:** Imaginative, Passive, Deliberate, Solitary

### **Secondary school subjects required:**

English

Biology

Chemistry

Geography

Mathematics

### **Where do they work?**

Research and Development, Medical Institutes, Government, Organizations, Environment Organizations, Resource Conservation Agencies.

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Ecology is the scientific study of interactions of organisms with one another and with the physical and chemical environment.

Environmental Studies is the academic field which systematically studies human interaction with the environment.

Some of the few sciences involved are:

Oceanography

Geoscience

Biochemistry

Marine Science

Microbiology

Meteorology

Environmental Engineering

Animal & Plant Sciences

Agricultural Engineering

Land Management

Paleontology

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## Medicine

Medicine includes a wide range of people, working in very varied roles. As in any strong team, it needs players with different aptitudes that complement each other.

Medical practitioners diagnose physical and mental illnesses, disorders and injuries, and prescribe medications and treatment to promote or restore good health.

### **Standard MAP Profile:**

**Motivation:** Experimental, Social, Physical

**Aptitude:** Visual, Verbal, Sequential, Numeric, Precision, Figurework

**Personality:** Factual, Deliberate, Assertive, Gregarious

### **Secondary School Subjects required:**

Biology

Chemistry

Physics

Mathematics

English

### **Where do they work?**

Hospitals, Medical facilities, research institutes, medicine manufacturing companies, health-care centres, Government.

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Medicine is a vast area. Here is a brief classification:

### **Basic sciences**

Anatomy; Biochemistry; Biostatistics; Embryology; Epidemiology;  
Genetic Histology; Immunology; Microbiology; Neuroscience; Nutrition;  
Pathology; Pharmacology; Physiology; Toxicology

### **Diagnostic specialties**

Clinical laboratory; Transfusion medicine; Cellular Clinical chemistry; Hematology;  
Clinical microbiology; Clinical immunology; Radiology; Interventional radiology;  
Nuclear Medicine

### **Clinical disciplines**

Anaesthesiology; Dermatology; Emergency; Internal; Naturopathy; Neurology;  
ObGyn; Palliative care; Dentistry

### **Interdisciplinary Fields**

Bioethics; Biomedical Engineering; Clinical pharmacology; Conservation; Diving;  
Forensics; Keraunomedicine Medical informatics; Medical computer science;  
eHealth; Pharmacogenomics; Sports medicine; Therapeutics; Travel medicine/Emporiatics

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### Paramedical & Health Sciences

A nurse is a healthcare professional who is focused on caring for individuals, families, and communities, ensuring that they attain, maintain, or recover optimal health and functioning. Nurses are capable of assessing, planning, implementing, and evaluating care independently of physicians, and they provide support from basic triage to emergency surgery.

#### **Standard MAP Profile:**

**Motivation:** Experimenting, Social, Organising

**Aptitude:** Visual, Sequential, 3-D, Numeric, Figurework

**Personality:** Gregarious, Passive, Factual, Spontaneous.

#### **Secondary School subjects:**

Biology

Chemistry

#### **Where do they work?**

Medical Institutions, Laboratories, Dispensaries, Clinics, Hospitals, Pharmaceutical Companies, Retirement Houses, Military Camps.



A few segments in nursing:

Registered nurses assess, plan, provide and evaluate preventative, curative and rehabilitative care for patients in a wide variety of settings. These include public and private hospitals, nursing homes, the community and home-based services, and in industry.

A clinical nurse specialist is a registered nurse who has demonstrated competency in advanced practice or has developed competency in an area of specialization.

A nurse manager is responsible for the effective management of staffing and financial resources enabling the provision of safe, cost effective nursing care within a specified field or across an entire hospital or health service.

**Holistic Nursing:** Holistic nurses provide medical care for patients while honoring the individual's subjective opinions about health, health beliefs, and values.

**Perioperative Nursing:** Perioperative nurses work in operating rooms in specialist hospitals, community and rural hospitals, surgery units and specialized clinics.

**Psychiatric Nursing:** Psychiatric nurses provide care for people suffering from psychiatric or mental illnesses.

**School Nursing:** School nurses are stationed at schools and to assure that the students and faculty of schools are provided proper medical care and other support inside the school itself.

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## Veterinary Medicine

Veterinary Medicine is that branch of medicine that deals with the diagnosis and treatment of diseases and injuries of animals, both domestic and wild-life.

### **Standard MAP Profile:**

**Motivation:** Physical, Experimenting, Social

**Aptitude:** Visual, Numerical, Figurework, Precision

**Personality:** Factual, Deliberate, Assertive, Gregarious

### **Secondary School subjects required:**

Biology

Chemistry

Physics

### **Where do they work?**

Hospitals, clinics, Medical institutes, individually, animal care centres, animal shelters, individually, animal conservation centres.

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#### About Veterinary Medicine:

Veterinary medicine is the branch of science that deals with the application of medical, surgical, public health, dental, diagnostic, and therapeutic principles to non-human animals, including wildlife and domesticated animals, including livestock, working animals, and companion animals.

Practitioners of veterinary medicine are known as veterinarians. In most developed countries, veterinarians are highly qualified professionals with advanced educations.

Veterinary science helps human health through the monitoring and control of zoonotic diseases. Veterinarians diagnose and treat sickness, disease and injury in all types of animals. They advise on measures to prevent the occurrence or spread of diseases, and on ways to improve the health and productivity of animals. They also supervise safety standards on food supplies.

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