

## Courses Description

**College:** Science

**Department:** Biology

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**Course ID:** 104265      **Description:** Comparative Anatomy

**Full Course Description:** \*

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**Course ID:** 104327      **Description:** Plant Biotechnology

**Full Course Description:** \*

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**Course ID:** 104329      **Description:** Biopesticides Technology

**Full Course Description:** \*

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**Course ID:** 104333      **Description:** Animal Tissue Culturing

**Full Course Description:** \*

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**Course ID:** 104353      **Description:** Economic Plants

**Full Course Description:** \*\*

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**Course ID:** 104354      **Description:** Medicinal Plants

**Full Course Description:** \*

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**Course ID:** 104355      **Description:** Greenhouse Management

**Full Course Description:** \*

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**Course ID:** 104430      **Description:** Forensic DNA Fingerprinting Techniques

**Full Course Description:** \*

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**Course ID:** 104445      **Description:** Microbiology of Extreme Environments

**Full Course Description:** \*

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**Course ID:** 104452      **Description:** Plant Reproductive Biology

**Full Course Description:** \*

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**Course ID:** 104473      **Description:** Environmental Biotechnology

**Full Course Description:** \*

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**Course ID:** 2104232      **Description:** Cytogenetics

**Full Course Description:** -

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**Course ID:** 2104252      **Description:** Fundamentals of Botany

**Full Course Description:** \*

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**Course ID:** 2104323      **Description:** Separation Techniques in Biotechnology

**Full Course Description:** \*

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**Course ID:** 2104336      **Description:** Plant Tissue Culturing

**Full Course Description:** \*

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**Course ID:** 2104426      **Description:** Quality Control

**Full Course Description:** \*

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**Course ID:** 2104454      **Description:** Phycology

**Full Course Description:** \*

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**Course ID:** 2104477      **Description:** Bioinformatics

**Full Course Description:** \*

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**Course ID:** 3104363      **Description:** Immunology

**Full Course Description:** \*

## Courses Description

**College:** Science

**Department:** Biology

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**Course ID:** 3104425      **Description:** Biochemistry (2)

**Full Course Description:** \*

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**Course ID:** 3104465      **Description:** Marine Biology

**Full Course Description:** \*

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**Course ID:** 4104325      **Description:** Recombinant D N A Technology

**Full Course Description:** \*

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**Course ID:** 4104326      **Description:** Gene Expression

**Full Course Description:** \*

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**Course ID:** 4104364      **Description:** Endocrinology

**Full Course Description:** \*

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**Course ID:** 4104366      **Description:** Applied Developmental Biology

**Full Course Description:** \*

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**Course ID:** 4104428      **Description:** Fermentation

**Full Course Description:** \*

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**Course ID:** 4104461      **Description:** Entomology

**Full Course Description:** \*

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**Course ID:** 4104462      **Description:** Evolution

**Full Course Description:** \*

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**Course ID:** 4104464      **Description:** Animal Behavior

**Full Course Description:** \*

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**Course ID:** 4104466      **Description:** Hematology

**Full Course Description:** \*

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**Course ID:** 4104468      **Description:** Neurobiology

**Full Course Description:** \*

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**Course ID:** 4104495      **Description:** Special Topics

**Full Course Description:** \*

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**Course ID:** 110104332      **Description:** Microtechnique

**Full Course Description:** \*

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**Course ID:** 140104105      **Description:** General Biology for Medical Science

**Full Course Description:** \*

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**Course ID:** 1801041102      **Description:** General Biology (2)

**Full Course Description:** This course concentrates on the basic principles of animal form and function, homeostasis, metabolic rate, chemical signals, digestive systems. Transport systems, defenses against infection, osmoregulation and excretion, reproductive systems, electrical signals, sensation and movement.

## Courses Description

**College:** Science

**Department:** Biology

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**Course ID:** 1801041103      **Description:** General Practical Biology (1)

**Full Course Description:** The course provides the practical aspects of general biology such as studying the light microscope and using it to identify cell types. It also explores the cell chemical and physical properties, metabolism, and modes of cell division. It briefly studies plant anatomy and characteristics of different plant groups.

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**Course ID:** 1801041104      **Description:** General Practical Biology (2)

**Full Course Description:** The course studies the different types of animal tissues, and it practices dissection to study the structure and function of different animal organs. It also explores the main stages of animal development, animal diversity, and different animal groups.

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**Course ID:** 1801041105      **Description:** General Biology for Medical Science

**Full Course Description:** The course studies the basic principles of biology, starting from biological molecules, cell structure, cell membranes, cell respiration, cell division, as well as the basic information about human body structure and function.

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**Course ID:** 1801041106      **Description:** Practical General Biology for Medical Science

**Full Course Description:** The course practically explores the cell chemical and physical properties, metabolism, and modes of cell division. It also studies the different types of animal tissues using the light microscope. It studies the structure and function of animal body as well as animal embryonic development and animal diversity.

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**Course ID:** 1801041107      **Description:** General biology for Sports students

**Full Course Description:**

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**Course ID:** 1801041221      **Description:** Genetics

**Full Course Description:** This course covers the study of the basic principles of Mendelian genetics, statistical and family analysis, sex determination, linkage, cytogenetics, chromosomal aberration, molecular structure of gene, its replication and transcription and mutation, population genetics

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**Course ID:** 1801041222      **Description:** Biochemistry (1)

**Full Course Description:**

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**Course ID:** 1801041223      **Description:** Practical Biochemistry (1)

**Full Course Description:** This course aims to teach students the principles of safety and hazards in biochemistry laboratories. The first group of experiments of the course covers the fundamental techniques and the advanced instruments used in the analysis and constructing important titration curves of amino acids and some other dyes. In the second group of experiments, the students will learn how to identify, quantize and differentiate between different biochemical compounds.

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**Course ID:** 1801041241      **Description:** General Microbiology

**Full Course Description:**

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**Course ID:** 1801041251      **Description:** Plant Biology

**Full Course Description:** The study of vascular and non-vascular plant divisions including: algae, liver worts, mosses and seedless and bearers vascular plants. Structure and functions of different plant tissues (Meristematic, Parenchyma, Collenchyma, Sclerenchyma, Epidermis Primary and Secondary Vascular tissue and vascular cambium), the study of plant organs, their structure function and their modification

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**Course ID:** 1801041254      **Description:** Plant Anatomy

**Full Course Description:**

## Courses Description

**College:** Science

**Department:** Biology

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**Couse ID:** 1801041263      **Description:** Invertebrate Biology

**Full Course Description:** The course covers the basic principles of invertebrate biology and classification. It also discusses the main invertebrate phyla such as: Proifera, cnidarians, platyhelminthes, annelida, Mollusca, arthropoda and echinodermata.

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**Couse ID:** 1801041264      **Description:** Vertebrate Biology

**Full Course Description:** \*

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**Couse ID:** 1801041331      **Description:** Histology

**Full Course Description:** The microscopic study of tissues and the tissue organization of organs in relation to their function using light and electron microscopy. Tissue preparation for microscopic study, histochemistry, stains, and stain technology will be slightly covered.

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**Couse ID:** 1801041332      **Description:** Microtechnique

**Full Course Description:** This course provides students with the skills and knowledge to prepare slides from plant and animal tissues to be examined microscopically. Fixation, washing, dehydration, clearing, impregnation, embedding, microtomy, staining, and mounting will be included

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**Couse ID:** 1801041342      **Description:** Mycology

**Full Course Description:** \*

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**Couse ID:** 1801041351      **Description:** Plant Physiology

**Full Course Description:** The course emphasizes the importance of photosynthesis, gas exchange, plant water relationship, soil as a nutrient reservoir, plants inorganic nutrients, the role of hormones in plant development, and environmental stress responses.

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**Couse ID:** 1801041352      **Description:** Plant Taxonomy

**Full Course Description:** \*

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**Couse ID:** 1801041354      **Description:** Medicinal Plants

**Full Course Description:** This course focuses on the medicinal properties of plants and their role in both traditional and modern medicine as one type of the alternative medicine, with special emphasis on the commonly used plants in Jordan. History of herbal medicine, and the active constituents of medicinal plants, preparing some herbal remedies, in addition to studying some nervous system stimulant plants (psychoactive drugs).

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**Couse ID:** 1801041355      **Description:** Greenhouse Management

**Full Course Description:** \*

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**Couse ID:** 1801041361      **Description:** Animal Physiology

**Full Course Description:** This course analyzes current concepts and molecular details of modern systems physiology through lecture, discussion, and writing assignments. Emphasis will be placed on understanding the mechanisms used by the organ systems (skeletal, muscular, endocrine, excretory, respiratory, circulatory, digestive, nervous systems) of different animals to maintain homeostasis

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**Couse ID:** 1801041362      **Description:** Developmental Biology

**Full Course Description:** The study of the basic principles of differentiation and morphogenesis, starting from gemetogenesis, fertilization, cleavage, gastrulation, and organogenesis. The development of the embryonic germ layers of deuterostome embryos will be covered as well

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**College:** Science

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**Course ID:** 1801041363      **Description:** Immunology

**Full Course Description:** This discipline is concerned with the study of the immune system of humans that has evolved to protect against infection by pathogens. The course will provide a basic understanding of human immunology and its relationship to health and disease. The course aims to provide students with an appreciation of the relationship between immunology and other biology disciplines while providing knowledge of the molecular and cellular basis of the immune system. The course will discuss as well the principals of immunological treatments including anti-inflammatory, anti-cancer, immunosuppressive, vaccines and antigen and antibody-based treatment

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**Course ID:** 1801041364      **Description:** Practical Developmental Biology

**Full Course Description:** \*

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**Course ID:** 1801041365      **Description:** Laboratory Animals

**Full Course Description:** The course will provide didactic and hands on training in the use of laboratory animals. The lectures will include: legislation, ethics, handling and husbandry of common laboratory animals, diseases and disease prevention, basic concept of laboratory animal breeding and genetics, anesthesia, analgesia and euthanasia of laboratory animals, basic surgical techniques. Research planning, animal models and humane endpoints as well as allergy to laboratory animals and other occupational hazards working with laboratory animals will be covered.

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**Course ID:** 1801041371      **Description:** Ecology

**Full Course Description:** The course covers the principles of ecology, the geochemocycles and man, energy and food cycles, aquatic ecosystem, terrestrial ecosystems, communities, populations and biosphere and relating all of the above to Jordan's ecology

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**Course ID:** 1801041425      **Description:** Biochemistry (2)

**Full Course Description:** The course covers carbohydrates, fatty acids and amino acids oxidation, anabolism and catabolism of nucleotides, biochemistry of hormones transport and effects on metabolism.

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**Course ID:** 1801041452      **Description:** Plant Reproductive Biology

**Full Course Description:** The aim of this course is to familiarize the student with the genetic mechanisms responsible for the differences in plant reproductive biology and how to use these advantages in the propagation of plants. The course includes the following topics: Composition and function of the flower, composition of pollen grains, their forms, and functions, multiplicity of fertilization, composition of seeds and their forms and functions. Self-pollination in the plant and the mechanisms that prevent its occurrence in other plants, the mechanisms of asexual reproduction in plants, vegetative reproduction and agriculture, plant biotechnology and controversy. Characteristics of plant life history and its role in the phenomenon of plant spread and biological invasion and the negative effects on indigenous plant species

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**Course ID:** 1801041454      **Description:** Phycology

**Full Course Description:** This course introduces the ecological and economic significance of algae. The underlying principles of algal growth and their response to light, temperature, and nutrients are examined. The potential of algae to provide raw material for the biotech industry are reviewed. In addition, the harmful effects of algae and means of mitigation, algae for biofuel, microalgae for food, use of algae in nanotechnology, high value products from algae are discussed

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**College:** Science

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**Course ID:** 1801041462      **Description:** Evolution

**Full Course Description:** This course describes the different schools of evolutionary thoughts and compares between them. In addition, it explains the different steps that led to the emergence of life as well as the different methods used to date the ancient fossils. The course aims to support the theory of evolution through presenting different evidences and examples from nature. Moreover, it differentiates between the mechanisms of evolution by means of artificial or natural selection and compares between the different patterns underlying species formation. Finally, the course demonstrates the consequences of living in groups and formulates the gradual steps that led to the evolution of modern humans.

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**Course ID:** 1801041463      **Description:** Genetic diversity

**Full Course Description:** This course describes the tool kit genes that determine the anterior- posterior and dorsal-ventral body axes during the early embryo development. Then, it elucidates the effect of tool kit genes in the growth and differentiation of different body organs. The course also explains the mechanisms underlying the evolution of expression patterns of tool kit genes in different organisms and demonstrates how these patterns diverged from the expression patterns in Drosophila. Moreover, the course elucidates the processes underlying the evolution of morphological novelties through changes in the regulation of developmental genes expression. Finally, the course explains the effect of environmental cues in producing different phenotypes from the same genotype.

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**Course ID:** 1801041464      **Description:** Animal Behavior

**Full Course Description:** The scientific study of the mechanistic and evolutionary causes of animal behavior, including communication, foraging and anti?predator behavior, spatial behavior, mating behavior, parental care, and social behavior.

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**Course ID:** 1801041465      **Description:** Marine Biology

**Full Course Description:** This course covers the physical structure, the organisms, and the processes of the oceans, from intertidal to deep-sea habitats. To understand the environments faced by marine biological diversity, the course will survey the chemical and physical properties of oceans and their habitats. The structure, adaptations, and life styles of organisms found over the range of habitats in the sea will be surveyed. The course will examine major marine habitats. Marine ecology will be the focus to learn about the processes affecting marine communities, and the dynamics of communities. Special topics incorporated into the course will include current issues in marine environmental management and conservation

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**Course ID:** 1801041466      **Description:** Hematology

**Full Course Description:** The course introduces the composition and function of blood cells, hematopoiesis, erythrocyte and leukocyte metabolism, production and destruction, classification of anemias and leukemias, etiology and laboratory findings. Mechanisms and tests of hemostasis (blood clotting) in normal versus patients with hemorrhagic or thrombotic diseases are also studied

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**Course ID:** 1801041467      **Description:** Parasitology

**Full Course Description:** This course is designed to give a broad overview of general parasitology, with respect to types of parasites, nature of parasitism, advantages, and disadvantages of parasitism. The course includes the life cycle of some common parasites of man and animals and epidemiology of tropical Parasites.

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**Course ID:** 1801041491      **Description:** Seminar

**Full Course Description:** This course provides a forum for students to discuss a research article in one of the various fields of Biology or Biotechnology. Students conduct an in-depth research topic of their choice, present it and discuss it with other students under the supervision of a faculty member

## Courses Description

**College:** Science

**Department:** Biology

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**Course ID:** 1801042231      **Description:** Cell Biology

**Full Course Description:** This course covers the study of the basics of cell biology, including the ultrastructure and function of cell membrane, organelles structure and functions, nuclear envelope, structure and function of chromatids, replication, protein synthesis, structure, and function of muscles and motility of cells.

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**Course ID:** 1801042233      **Description:** Practical Cell Biology

**Full Course Description:** This practical course covers some techniques used in cell biology through performing experiments about microscopic measurements of cells, plasma membrane and osmosis, cellular fractionation, chemistry of cells, cell division, cytoskeleton, and extracellular matrix.

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**Course ID:** 1801042252      **Description:** Principles of Plant Biology

**Full Course Description:** \*

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**Course ID:** 1801042265      **Description:** Functional Anatomy

**Full Course Description:** This course analyzes current concepts and molecular details of modern systems physiology through lecture, discussion, and writing assignments. Emphasis will be placed on understanding the mechanisms used by the organ systems (skeletal, muscular, endocrine, excretory, respiratory, circulatory, digestive, nervous systems) of different animals to maintain homeostasis.

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**Course ID:** 1801042321      **Description:** Biotechnology

**Full Course Description:** \*

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**Course ID:** 1801042322      **Description:** Molecular Biology

**Full Course Description:** In this course, emphasis on gaining knowledge about the nature of macromolecules (Proteins and Nucleic Acids) and understanding the interactions that make them up. The course also highlights the various cellular activities carried out by the genetic material (i.e., DNA). These cellular activities include DNA replication, transcription, translation, mutagenesis and mutations, and DNA repair mechanisms in both prokaryotes and eukaryotes.

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**Course ID:** 1801042323      **Description:** Separation of Biological Molecules

**Full Course Description:** This course is an introduction to the theory, standard practices, and methodologies employed for solutions and culture preparation. Students receive hands-on laboratory experience including sterile techniques, media preparation, common buffers, and solutions for our Life Sciences laboratories.

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**Course ID:** 1801042324      **Description:** Practical Molecular Biology

**Full Course Description:** The course focuses on the various methods of DNA extraction, DNA measurement and purity, and visualization. It also introduces the students to the techniques of DNA amplification and cDNA formation, namely the polymerase chain reaction and reverse transcription reaction with emphases on the encountered troubleshooting

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**Course ID:** 1801042325      **Description:** Recombinant DNA Technology

**Full Course Description:** \*

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**Course ID:** 1801042326      **Description:** Gene Expression

**Full Course Description:** \*

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**Course ID:** 1801042327      **Description:** Plant Biotechnology

**Full Course Description:** \*

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**Course ID:** 1801042328      **Description:** Preparation of Solutions and Culture Media

**Full Course Description:** This course is an introduction to the theory, standard practices, and methodologies employed for solutions and culture preparation. Students receive hands-on laboratory experience including sterile techniques, media preparation, common buffers, and solutions for our Life Sciences laboratories.

## Courses Description

**College:** Science

**Department:** Biology

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**Course ID:** 1801042329      **Description:** Pesticides Technology

**Full Course Description:** \*

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**Course ID:** 1801042333      **Description:** Animal Tissue Culture

**Full Course Description:** \*

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**Course ID:** 1801042336      **Description:** Plant Tissue Culture

**Full Course Description:** \*

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**Course ID:** 1801042341      **Description:** Applied Microbiology

**Full Course Description:** The course covers the microbial metabolic processes that can be utilized for commercial and nutritional purposes. It includes food preservation by chemical and physical factors, food spoilage, and contamination of food by microorganisms, production of some types of food.

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**Course ID:** 1801042343      **Description:** Virology

**Full Course Description:** In this course, emphases are on gaining knowledge about the nature of viruses, understanding their interactions with host cells, viral replication, gene expression, and latency. The course also highlights the various viral families involved in diseases and the different cultivation and detection methods.

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**Course ID:** 1801042353      **Description:** Economic Botany

**Full Course Description:** Economic botany explores the importance and nature of plant products in our lives. The course will cover the use of plants as a source of food (cereals, legumes, nuts, vegetables, fruits, spices and other flavouring materials) and as source of beverages and textiles. The course will also focus on plant products of industrial value (fibres, wood, cork, rubber, tannin gums, resins and vegetable oils). A brief idea about the use of plants as medicines and the use of plants in ornamental gardening will be covered too

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**Course ID:** 1801042366      **Description:** Applied Developmental Biology

**Full Course Description:** \*

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**Course ID:** 1801042422      **Description:** Modeling Biological Systems

**Full Course Description:** The course covers the modeling of biological processes, including deterministic and stochastic processes. The course will emphasize the development and construction of working models and the interpretation of results. Students are directed to develop their own models of a real – world biological process.

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**Course ID:** 1801042423      **Description:** Protein Biotechnology

**Full Course Description:** \*

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**Course ID:** 1801042424      **Description:** Bioreactors

**Full Course Description:** \*

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**Course ID:** 1801042426      **Description:** Quality Control

**Full Course Description:** \*

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**Course ID:** 1801042427      **Description:** Experimental Design and Data Analysis

**Full Course Description:** This course explains the basic principles of designing and experiment for biological application, including sample collection, and most used experimental designs in biological sciences. Emphases on the role of statistical tools in analyzing and interpreting biological data will be covered.

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**Course ID:** 1801042428      **Description:** Fermentation

**Full Course Description:** \*



## Courses Description

**College:** Science

**Department:** Biology

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**Course ID:** 1801042429      **Description:** Industrial and pharmaceutical Biotechnology

**Full Course Description:** \*

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**Course ID:** 1801042430      **Description:** Forensic DNA Fingerprinting Techniques

**Full Course Description:** \*

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**Course ID:** 1801042442      **Description:** Medical Microbiology

**Full Course Description:** \*

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**Course ID:** 1801042447      **Description:** Microbial Genetics

**Full Course Description:** \*

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**Course ID:** 1801042468      **Description:** Cytogenetics

**Full Course Description:** This course covers chromosome structure and function, and it studies the role of chromosomes in human disease. Topics covered include cytogenetic methodology, types of chromosome aberration, chromosomes and cancer, chromosome breakage syndromes, and fragile sites on human chromosomes

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**Course ID:** 1801042477      **Description:** Bioinformatics

**Full Course Description:** \*

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**Course ID:** 1801042495      **Description:** Special Topics

**Full Course Description:** \*

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**Course ID:** 1801042496      **Description:** Field Training

**Full Course Description:** \*

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**Course ID:** 2201041222      **Description:** Biochemietry (1)

**Full Course Description:**

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**Course ID:** 2201041328      **Description:** A

**Full Course Description:**

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**Course ID:** 2201041362      **Description:** Development Biology

**Full Course Description:**

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**Course ID:** 2201041468      **Description:** Neurophysilogy

**Full Course Description:**

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**Course ID:** 2201041471      **Description:** a

**Full Course Description:**

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**Course ID:** 2201041472      **Description:** a

**Full Course Description:**

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**Course ID:** 2201042231      **Description:** Molecular Biology

**Full Course Description:**

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**Course ID:** 2201042267      **Description:** a

**Full Course Description:**

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**Course ID:** 2201042343      **Description:** Virology

**Full Course Description:**

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**Course ID:** 2201042421      **Description:** a

**Full Course Description:**

### Courses Description

**College:** Science

**Department:** Biology

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**Couse ID:** 2201042425      **Description:** a

**Full Course Description:**

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**Couse ID:** 2201042477      **Description:** Bioinformatics

**Full Course Description:**