

M.Sc. Biochemistry

Programme Outcome

Students will be

Able to apply and effectively communicate scientific reasoning and data analysis in both written and oral forums.

Will understand and practice the ethics surrounding scientific research.

Understand the significance of biochemistry.

Demonstrate an understanding of fundamental biochemistry principles.

Course outcomes

Physiology

- To provide a foundation of physiological principles and their applications in real life situations.
- To understand the interrelationship of human organ systems.
- To apply a holistic approach to human health.

Clinical Biochemistry

- Improves the ability to assess the laboratory indicators of physiologic conditions and diseases.
- Helps to know the biochemical and molecular tools needed to accomplish preventive, diagnostic and therapeutic intervention on hereditary and acquired disorders.

Nutritional Biochemistry

- To enable the importance of nutrition in everyday life.
- To understand and have knowledge of biochemical techniques that are relevant for the investigation of the nutrient metabolism.
- To provide an insight in biochem methods and analyses used in nutritional research.

Endocrinology

- Helps to give basic knowledge of endocrine system functions.
- Helps to describe the clinical manifestations of conditions of hypo and hyper secretion of endocrine glands.
- To define and categorize the hormones secreted according to their biochemical structure.

Molecular Biology

- to gain an understanding of chemical and molecular processes that occur in and between cells.
- To exhibit a basic knowledge in genetics, cell and molecular biology.

Genetics

- To gain knowledge about the organellar inheritance.
- To study fine structure of the gene
- To study cell division and chromosome segregation.

Intermediary Metabolism

- analyze complex chemical problems and draw logical conclusions.
- understand and apply scientific reasoning in the chemical sciences.
- demonstrate technical and analytical skills in chemistry and biochemistry

Cell Biology

- Exhibit a knowledge base in genetics, cell and molecular biology, and anatomy and physiology
- Engage in review of scientific literature in the areas of biomedical sciences
- Demonstrate the knowledge of common and advanced laboratory practices in cell and molecular biology

Enzymology

- obtain basic knowledges about the relationship between properties and structure of the enzymes.
- Be able to describe the basic properties of enzyme
- define differences between enzymes and normal catalytic substances

Biomacromolecules

- Describe the structure and function of lipids.
- Describe the structure and function of the nucleic acids; DNA and RNA.
- Describe the structure and functional diversity of proteins.
- Describe the synthesis of the biomacromolecules: polysaccharides, nucleic acids and proteins.

Ecology and Evolution

- Have an enhanced knowledge and appreciation of evolutionary biology and behaviour
- describe the experiments of Mendel and use Mendel's principles to solve novel problems.
- relate broad patterns in the fossil record to major geological events and plate tectonic movement.

Microbiology

- Describe how microorganisms are used as model systems to study basic biology, genetics, metabolism and ecology

- Students will be able to communicate scientific information effectively, especially relating to microbiological organisms
- Comprehend the various methods for identification of unknown microorganisms
- To impart skill in handling and culture of Microorganisms

Analytical Techniques

- Design an analytical work-flow to acquire data and achieve the research objectives of their project.
- Undertake the correct sample preparation and characterization prior to analysis by the chosen techniques or instruments.
- understand the underlying theoretical basis of analytical techniques

Immunology

- student shall be able to: Trace the history and development of immunology
- gain knowledge on how the human immune system fights disease and infection.
- be able to provide an overview of the interaction between the immune system and pathogens.

Biotechnology

- to empower students with the ability to think and solve problems in the field of biotechnology
- To ensure students are able to effectively communicate with biotech and other interdisciplinary professionals.
- To impart the knowledge of Food Technology and Fermentation Techniques