B.Sc. - Anaesthesia Technology

Programme Outcomes (POs)

PO1. Develop understanding of human anatomy and physiology as it relates to health and disease

PO2. Demonstrate knowledge of clinical procedures and diagnostic testing in various healthcare settings

PO3. Acquire competency in medical terminology and documentation

PO4. Communicate effectively with patients and healthcare professionals

PO5. Demonstrate understanding of ethical and legal issues related to healthcare delivery

PO6. Familiarize with healthcare management and healthcare delivery systems

PO7. Critically analyze healthcare research and evidence-based practice

PO8. Showcase competency in interprofessional collaboration and teamwork

PO9. Develop lifelong learning and professional development to adapt to changing healthcare environments.

Programme Specific Outcomes (PSOs)

PSO1. The program will provide students with a thorough understanding of the principles and techniques of anaesthesia, including the different types of anaesthesia, the administration of anaesthesia, and the monitoring and maintenance of patient safety.

PSO2. Students will have the opportunity to gain hands-on clinical experience through practical training and laboratory exercises, allowing them to apply their knowledge and skills in real-world settings.

PSO3. The program will help students develop critical thinking and problem-solving skills, which are essential for working in the fast-paced and complex environment of the operating room.

PSO4. Students will learn about the importance of patient-centred care in anaesthesia technology and how to prioritize patient comfort and safety during procedures.

PSO5. The program will provide students with exposure to the latest technology and equipment used in anaesthesia, allowing them to stay current and adapt to new developments in the field.

PSO6. Students will learn about the ethical and legal issues related to anaesthesia technology, including patient confidentiality, informed consent, and medical malpractice.

Course Outcomes

2021-2023

Semester	Subject Code	Subject	Course Outcomes
1	**21BASANA101**	**Anatomy – I**	CO1: Understand the structure and function of the human body, including the organization of the various body systems (e.g., skeletal, muscular, cardiovascular, respiratory, digestive, urinary, and nervous). CO2: Acquire knowledge about the anatomy and physiology of the cell and tissues, including the different types of cells, tissues, and organs and their roles in maintaining homeostasis. CO3: Summarize the structure and function of the skeleton, including the bones, joints, and the musculoskeletal system. CO4: Learn about anatomy and physiology of the muscles, including the different types of muscles, the mechanisms of muscle contraction, and the functional relationships between the muscles and bones.
1	**21BASPHY102**	**Physiology – I**	CO1: Understand the fundamental principles of cell physiology, including membrane transport, cellular metabolism, and the regulation of cellular activities. CO2: Acquire knowledge about regulation of fluid, electrolyte, and acid-base balance in the body, including the mechanisms of osmoregulation and the role of the kidneys. CO3: Understand physiological mechanisms of cardiovascular function, including the regulation of blood pressure, blood flow, and heart rate. CO4: Understand physiological mechanisms of respiratory function, including the control of breathing, gas exchange, and acid-base balance. CO5: Understand the physiological mechanisms of digestive function, including the regulation of digestive secretions, motility, and nutrient absorption.

Semester	Subject Code	Subject	Course Outcomes
1	21BASPAT103	Pathology-[Clinical pathology, Hematology & Blood –Banking – I	CO1: To understand the various techniques in Diagnostic pathology CO2: To be able to handle, process and utilise various cytological, histopathological and clinical pathology samples for appropriate diagnosis. CO3: To appropriately manage Biomedical waste and understand universal precautions CO4: Ability to interpret laboratory test results and diagnose diseases based on these results. CO5: Knowledge of the ethical, legal, and professional considerations involved in Clinical Pathology practice.
1	21BASAT1D01	Introduction to Anesthesia Technology– I	CO1: Understand the basic concepts of anaesthesia in medical and allied sciences. CO2: Acquire Knowledge of the anesthetic products. CO3: Understand the principles and techniques in order to provide anesthetic services CO4: Develop professional skills. CO5: Acquire knowledge of clinical environment and administration.
1	21MENVIOVE2	Environment Studies	CO1: Demonstrate a basic understanding of the principles of environmental science, including key environmental issues, the impact of human activities on the environment, and strategies for promoting sustainability. CO2: To apply critical thinking and analytical skills to evaluate environmental problems and propose evidence-based solutions CO3: Understand environmental laws and regulations, as well as the legal frameworks for addressing environmental problems CO4: To assess the role of environmental movements in shaping environmental policy and practice in India, and propose strategies for advancing environmental justice and sustainability in the country. CO5: To evaluate and address ethical and logistical challenges associated with conducting fieldwork in environmental studies, and propose strategies for improving scientific integrity and social responsibility in environmental research.

Semester	Subject Code	Subject	Course Outcomes
1	**21ENG1L02**	**English– I**	CO1: Demonstrate a coherent and systematic knowledge of the field of English literature showing an understanding of current theoretical and literary developments in relation to the specific field of English studies. CO2: Demonstrate a set of basic skills in literary communication and explication of literary practices and process with clarity.

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Semester	Subject Code	Subject	Course Outcomes
2	**21BASANA201**	**Anatomy – II**	CO1: Understand of the anatomy and function of the cardiovascular, respiratory, digestive, and urinary systems. CO2: Acquire the knowledge of the anatomy and function of the endocrine and reproductive systems. CO3: Understand of the anatomy and function of the nervous system, including the brain and spinal cord. CO4: Acquire the Knowledge of the anatomy and function of the musculoskeletal system, including the bones, joints, and muscles. CO5: Apply anatomical concepts and principles to the diagnosis and treatment of medical conditions. CO6: Acquire knowledge of the interrelationships between different body systems and how they work together to maintain homeostasis.

Semester	Subject Code	Subject	Course Outcomes
2	21BASPHY202	Physiology – II	CO1: Understand the physiological principles and mechanisms that regulate the functions of the cardiovascular, respiratory, digestive, and urinary systems. CO2: Acquire knowledge of the physiological mechanisms that regulate the endocrine and reproductive systems. CO3: Understand the neural and muscular mechanisms that regulate movement and coordination. CO4: Acquire the knowledge of the physiological processes that regulate body temperature, fluid balance, and electrolyte balance. CO5: Apply physiological concepts and principles to the diagnosis and treatment of medical conditions. CO6: Acquire knowledge of the interrelationships between different body systems and how they work together to maintain homeostasis.
2	21BASPAT203	Pathology-[Clinical pathology, Hematology & Blood –Banking – II	CO1: Understanding of the normal and abnormal haematopoiesis and its regulation. CO2: Knowledge of the various blood cell types, their functions, and disorders affecting them. CO3: Understanding of the techniques used for the diagnosis and management of blood disorders such as thrombotic disorders. CO4: Knowledge of blood group systems, blood typing, cross-matching and compatibility testing CO5: Application of the principles and techniques involved in blood transfusion and transfusion reactions. CO6: Understanding of the quality control and standard operating procedures in Haematology and Blood Banking.

Semester	Subject Code	Subject	Course Outcomes
2	21BASAT2D01	Introduction to Anaesthesia Technology– II	CO1: Understand the principle concepts of anaesthesia in medical and allied sciences. CO2: Acquire Knowledge of the anaesthetic products. CO3: Understand the principles and techniques in order to provide anaesthetic services CO4: Develop professional skills. CO5: Acquire knowledge of clinical environment and hospital administration.
2	21ENG2L02	English – II	CO1: Understanding of major literary works and their cultural, historical, and philosophical contexts CO2: Understanding of the relationship between literature and social, political, and cultural issues, and the ways in which literature can be used to critique and challenge dominant ideologies. CO3: Exposure to a variety of cultural perspectives and the development of an appreciation for diversity and inclusivity.
2	21BASANA201L	Practical: Anatomy	CO1: Understand the basic principles body systems in the field of medical diagnostics. CO2: Gain hands-on experience with various functions used ijn anatomy. CO3: Develop the ability to analyze and interpret clinical findings in order to correlate with theoretical background. CO4: Acquire an understanding of the ethical and legal considerations involved in diagnostics. CO5: Develop skills in the design and implementation of the fundamentals of various body systems involved in clinical aspects.

Semester	Subject Code	Subject	Course Outcomes
2	21BASPHY202L	Practical: Physiology-II	CO1: Understand the basic principles and applications of physiological systems in the field of medical diagnostics. CO2: Gain hands-on experience with various instruments used in physiology. CO3: Develop the ability to analyze and interpret physiological data in order to correlate with theoretical background. CO4: Acquire an understanding of the ethical and legal considerations involved in diagnostics. CO5: Develop skills in the design and implementation of the fundamentals of various body systems involved in clinical aspects.

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3	21BASBIO301	Biochemistry I	CO1: Understand the fundamental principles of biochemistry, including the structure and function of biological macromolecules. CO2: Acquire knowledge of the metabolic pathways involved in the utilization of energy and the production of cellular components. CO3: Understand the regulation of metabolic processes and the mechanisms by which cells respond to changes in their environment. CO4: Acquire Knowledge of the biochemical basis of inherited diseases and disorders. CO5: Analyse and interpret biochemical data, including spectrophotometric and chromatographic techniques. CO6: Knowledge of the principles and techniques of protein purification and characterization.

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3	21BASBIO301L	PRACTICAL BIOCHEMISTRY	CO1: Knowledge of the theory and principles underlying biochemistry experiments and the ability to apply this knowledge to analyze data and interpret results. CO2: Development of critical thinking and problem-solving skills through the design and execution of independent laboratory projects. CO3: Acquisition of skills in laboratory safety, including the proper handling of hazardous chemicals and materials.
3	21BASMIC302	Microbiology – I	CO1: Understand the diversity of microorganisms and their role in the environment, human health, and industrial processes. CO2: Understand the basic structures and functions of microorganisms, including their cellular and molecular biology. CO3: Apply the methods used for the isolation, cultivation, and identification of microorganisms. CO4: Learn about the interactions between microorganisms and their hosts, including the mechanisms of pathogenesis and the host immune response. CO5: Acquire knowledge about the principles and applications of sterilization, disinfection, and infection control.

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3	**21BASAT3D03**	**Anesthesia Technology – Clinical**	CO1: To be able to develop clinical competency in anaesthesia technology, allowing them to safely and effectively administer anaesthesia to patients and monitor their vital signs during procedures. CO2: Acquire knowledge about different types of anaesthesia, including local, regional, and general anaesthesia, and how to administer them in various clinical settings. CO3: Exposure to the latest technology and equipment used in anaesthesia technology, including anaesthesia machines, monitoring devices, and ventilators. CO4: Learn how to manage emergency situations, such as respiratory or cardiovascular complications, during anaesthesia procedures. CO5: Understanding about the importance of patient-centred care in anaesthesia technology and how to prioritize patient comfort and safety during procedures.
3	**21ENTPDG01**	**Entrepreneurship Development**	CO1: Outline the function of the entrepreneur in the successful, commercial application of innovations and recall the different opportunities and successful growth stories. CO2: Learn how to start an enterprise and design business plans that are suitable for funding by considering all dimensions of business. CO3: Prioritize personal attributes that enable best use of entrepreneurial opportunities CO4: Examine Economic conditions with higher level knowledge and understanding of contemporary trends in e-commerce and business finance. CO5: Explore entrepreneurial leadership and management style.

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3	**21BASMED3S02**	**Medicine Relevant to Specialization**	CO1: Knowledge of the causes, mechanisms, and effects of diseases, as well as the basic principles of disease diagnosis and treatment. CO2: Development of clinical skills, including physical examination, patient assessment, and diagnosis. CO3: Understanding of the actions and interactions of drugs on the human body, as well as the principles of drug therapy and drug interactions. CO4: Ability to provide high-quality patient care, including the management of acute and chronic illnesses and the development of treatment plans. CO5: Understanding of ethical principles and standards of professional practice in the field of medicine.
3	**21CENG3A02**	**Communicative English**	CO1: To enhance the understanding of LSRW skills and various approaches to language. CO2: Providing an in-depth academic exposure about various forms of communication to enable students to be better speakers and users of language. CO3: Demonstrate a coherent and systematic knowledge of the field of communication through understanding of current linguistic and literary developments. CO4: Demonstrate a set of basic skills in literary communication and explication of literary practices and process with clarity. CO5: Write analytically in a variety of formats, including essays, speeches, and reflective writings.

Course Outcomes

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4	**Biochemistry - II**	CO1: Understand the metabolic pathways and regulation CO2: Acquire Knowledge of the structure and function of enzymes CO3: Understand the biochemistry of carbohydrates, lipids, and nucleic acids CO4: Acquire Knowledge of the structure and function of proteins
4	**Microbiology - II**	CO1: Develop a comprehensive understanding of the diversity of microorganisms and their impact on human health and the environment. CO2: Understand the basic concepts of microbial pathogenesis, including mechanisms of infection, host defences, and treatment strategies. CO3: Develop skills in identifying, isolating, and characterizing different types of microorganisms, including bacteria, viruses, fungi, and parasites. CO4: Understand the principles of antimicrobial therapy, including the selection and use of antibiotics and other antimicrobial agents. CO5: Develop critical thinking skills and the ability to apply knowledge and laboratory techniques to solve problems related to microbiology.
4	**Anesthesia Technology – Applied**	CO1: Understanding of the basic principles and techniques of anaesthesia including the different types of anaesthesia, their indications, and the techniques used to administer them. CO2: Ability to monitor and maintain the safety of patients during anaesthesia, including the use of monitoring equipment, checking vital signs, and ensuring proper oxygenation and ventilation. CO3: Familiarity with the equipment and technology used in anaesthesia, including breathing circuits, anaesthesia machines, and ventilators. CO4: Understanding the role of an anaesthesia technician in the operating room, including their responsibilities, duties, and the team-based approach to patient care. CO5: Application of knowledge of pharmacology of anaesthesia, including the pharmacodynamics and of the drugs used in anaesthesia.
4	**Database Management**	CO1: Provide the knowledge of Hospital Management system CO2: Determine the ability to archive data, manage and retrieve the necessary Hospital Management data CO3: Create different visual representation of data CO4: acquire knowledge of front end and back end of internet CO5: Apply programming fundamentals using programming tools.

Sem	Subject	Course Outcomes
4	**Indian Constitution**	CO1: learn and understand the Indian Constitution and follow as a citizen. CO2: To Remember, Understand and Apply the Indian Constitution and also citizen following the constitution within the framework. CO3: To understand the concept of CM and State Governor, PM and President, appointment of Supreme Court, High Court and Consumer Court - Judge's. CO4: To understand the existing houses and functioning system of it.
4	**Practical: Biochemistry**	CO1: Develop a comprehensive understanding of the fundamental principles and techniques of biochemistry. CO2: Gain hands-on experience with a variety of biochemical techniques, including protein purification, enzyme kinetics, spectrophotometry, and chromatography. CO3: Understand the structure and function of biological macromolecules, including proteins, nucleic acids, and lipids. CO4: Study the metabolism of carbohydrates, lipids, and amino acids and the regulation of metabolic pathways. CO5: Develop the ability to analyze and interpret biochemical data
4	**Practical: Microbiology**	CO1: Understand the microbiology laboratory techniques and procedures, such as staining, cultivation, and isolation of microorganisms. CO2: Identify and characterize different microorganisms using a variety of laboratory techniques. CO3: Exposure to state-of-the-art microbiology techniques and equipment, as well as current research in the field. CO4: Develop critical thinking and problem-solving skills through the design and execution of independent laboratory projects. CO5: Enable to communicate scientific information effectively, both orally and in writing.