



KMCT

COLLEGE OF ALLIED HEALTH SCIENCES

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COURSE OUTCOME FOR ALL COURSES

2.6.1 The institution has stated the learning outcomes (generic and programme-specific) and graduate attributes as per the previous of the regulatory bodies and the University; which are communicated to the students and teachers through the website and other documents.

BACHELOR OF PHYSIOTHERAPY (BPT)

YEAR OF STUDY	COURSE	COURSE OUTCOMES
I Year BPT	Anatomy	<ul style="list-style-type: none"> It focuses on comprehending the organization and relationships of various elements of the human body. It entails dissecting organs, tissues, muscles, bones, and other structures and frequently involves the use of cadavers. Examines and analyzes cells, tissues, and their constituents, such as cells, organelles, and cellular processes, using microscopes.
	Physiology	<ul style="list-style-type: none"> Students will develop a thorough understanding of how the body's physiological systems, such as the circulatory, respiratory, neurological, and musculoskeletal systems, function. Students will be able to apply physiological principles to diagnose and treat medical conditions, prescribe appropriate interventions, and understand the effects of medications after studying physiology.
	Biomechanics and kinesiology	<ul style="list-style-type: none"> Students will develop a thorough grasp of how forces, motion, and mechanics relate to the movement and function of the human body. Students will learn to examine movement patterns in order to identify risk factors for injury and devise treatments to minimize or lessen these risks. Biomechanical understanding is essential for building assistive devices, prosthetics, and orthotics to help people with mobility issues.





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	Psychology	<ul style="list-style-type: none"> • Develop a thorough understanding of the principles and theories that explain human behavior in a variety of circumstances. • Improve the critical thinking and analytical abilities through evaluating psychological research, theories, and real-world applications. • Gain a better understanding of mental health illnesses, including their causes, symptoms, and treatment choices. • Enhance communication skills in order to deal with diverse individuals in both research and therapeutic settings.
	Sociology	<ul style="list-style-type: none"> • Able to describe and distinguish major sociological approaches like functionalism, conflict theory, symbolic interactionism, and feminist theory. • Helps to critically analyze and evaluate social structures and organizations such as family, education, government, and the economy.
II Year BPT	Electrotherapy	<ul style="list-style-type: none"> • Learn about electrotherapy techniques such as electrical stimulation, ultrasound therapy, laser therapy, and others. • Discover how to apply electrotherapy techniques in clinical settings, such as selecting appropriate modalities for certain conditions, assessing patients, and planning treatment. • become aware of the safety regulations and ethical considerations associated with the use of electrotherapy in healthcare, such as patient consent and safety precautions. • Capable of designing and implementing electrotherapy treatment regimens tailored to individual patient needs, taking into account factors such as diagnosis, age, and medical history.



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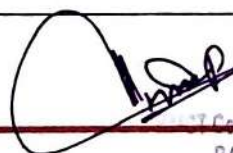
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	<p style="text-align: center;">Exercisetherapy</p>	<ul style="list-style-type: none"> • Gain knowledge of human anatomy and physiology, particularly the musculoskeletal, cardiovascular, and respiratory systems, which are essential for devising effective exercise regimens. • Understand the causes, symptoms, and diagnostic methods of common musculoskeletal disorders and injuries. • Discover how to prescribe appropriate workouts for people with varied musculoskeletal disorders, taking into account aspects like age, fitness level, and specific goals. • Gain experience doing comprehensive clinical examinations of patients' physical capabilities and limitations, such as range of motion, strength, flexibility, and posture. • Understand the importance of safety concerns while prescribing workouts, as well as the ability to analyze and manage potential hazards or contraindications.
	<p style="text-align: center;">Pharmacology</p>	<ul style="list-style-type: none"> • Gain an understanding of fundamental pharmacological principles such as drug classification, modes of action, pharmacokinetics, and pharmacodynamics. • Understand the therapeutic indications, contraindications, and potential side effects of popular medicines used in physical therapy. • Able to evaluate patients' medication histories, appreciating the importance of medication use in relation to the patient's condition and physical therapy treatment. • Capable of recognizing and managing adverse drug reactions or side effects that may interfere with a patient's response to physical therapy procedures.




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	Microbiology	<ul style="list-style-type: none"> • Gain a fundamental grasp of microbiology, including microbe taxonomy, microbial structure, and function. • Discover the normal flora found in the human body and its function in health and sickness. • Recognize and comprehend typical harmful microorganisms, such as bacteria, viruses, fungi, and parasites, as well as their means of transmission. • Understand infection control principles, such as hand cleanliness, aseptic procedures, and the use of personal protective equipment. • Learn about infection-prevention strategies such as immunization and patient education.
	Pathology	<ul style="list-style-type: none"> • Learn how to do complete clinical evaluations to identify pathological disorders, including how to spot signs and symptoms that warrant referral to other healthcare specialists. • Learn how to incorporate pathology information into the creation of efficient physiotherapy treatment plans while taking into account the unique demands and constraints of patients with varied medical conditions. • Understand the precautions and safety regulations that must be followed when working with patients who have communicable diseases, infections, or other health threats.
III Year BPT	General medicine and general surgery	<ul style="list-style-type: none"> • Understanding of internal medicine principles, encompassing organ systems and disorders such as cardiovascular, respiratory, gastrointestinal, renal, endocrine, and infectious diseases. • Create effective treatment strategies that include drug management and lifestyle changes. • Fundamental knowledge of surgical principles, techniques, and procedures





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		<ul style="list-style-type: none"> • Suturing, knot tying, and sterile procedures, as well as an awareness of surgical equipment and their indications of applications.
	<p>Physiotherapy in general medicine and general surgery</p>	<ul style="list-style-type: none"> • Understanding of common medical illnesses seen in general practice, such as cardiovascular, pulmonary, neurological, and metabolic problems • To diagnose and manage a wide range of medical disorders, obtain detailed medical histories, perform physical examinations, and interpret diagnostic procedures such as laboratory results and medical imaging. • Learn about common surgical techniques, such as the pre-operative, intra-operative, and postoperative phases. • Recognize the significance of pre-operative examinations in determining a patient's physical preparedness for surgery and probable post-operative rehabilitation needs. • Learn how to deliver post-operative physiotherapy interventions suited to certain surgical specialties, such as early mobilization, pain management, wound care, and scar management. • To reduce the risk of complications, understand safety regulations and infection control measures when working with post-operative patients.
	<p>Cardio respiratory disorders and surgery</p>	<ul style="list-style-type: none"> • In-depth knowledge of the cardiovascular and respiratory systems, including the heart, blood arteries, lungs, and related components. • A thorough understanding of the etiology, pathophysiology, and clinical symptoms of prevalent cardiorespiratory illnesses. • Learn about the many diagnostic tests and imaging modalities used to evaluate cardiorespiratory disorders, such as ECG, echocardiography, pulmonary function tests, and angiography.



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		<ul style="list-style-type: none"> Learn about surgical techniques used to treat cardiorespiratory disorders, such as open-heart surgery, lung resection, and minimally invasive procedures such as angioplasty and stenting.
	Physiotherapy in cardiorespiratory disorders and intensive care management	<ul style="list-style-type: none"> Learn how to give complete care to patients before and after cardiorespiratory surgery, including vital sign monitoring, pain management, complication prevention, and rehabilitation assistance. Airway management expertise is required to guarantee appropriate oxygenation and ventilation. Master procedures such as chest percussion, postural drainage, and manual and mechanical pulmonary secretion clearing. Understand cardiac rehabilitation ideas and methods, as well as how to guide patients via exercise regimens and lifestyle changes.
	Community medicine	<ul style="list-style-type: none"> Learn about key public health concepts such as epidemiology, health promotion, illness prevention, and health policy. Surveys, interviews, and data analysis are used to assess a community's health needs and priorities. Learn how to create and administer health promotion and education initiatives that improve community health. Examine epidemiological data to uncover illness patterns, risk factors, and appropriate solutions.
IV Year BPT	Neurology and neurosurgery	<ul style="list-style-type: none"> Deep understanding of the nervous system's anatomy and physiology, including the central nervous system (brain and spinal cord) and peripheral nervous system. Knowledge of common neurological disorders such as stroke, traumatic brain injury, spinal cord injury, multiple sclerosis, Parkinson's disease, and neuropathies.



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		<ul style="list-style-type: none"> • Ability to conduct neurological examinations to diagnose and monitor neurological conditions.
	<p>Physiotherapy in Neurology and neurosurgery</p>	<ul style="list-style-type: none"> • Learn how to do extensive neurological examinations, including motor function, sensory function, coordination, balance, and gait analysis. • Learn how to teach patients and their families about the nature of their neurological illness, treatment alternatives, and home exercise routines. • Selection and application of assistive devices and orthoses to aid people with neurological disabilities. • Learn how to give physiotherapy care to patients prior to and after neurosurgery, including assessment, pain management, mobility training, and complications monitoring. • To improve patients' ability to conduct daily tasks, work on activities of daily living (ADL) training and adaptive approaches.
	<p>Orthopaedics and sports medicine</p>	<ul style="list-style-type: none"> • Common orthopedic problems such as fractures, osteoarthritis, rheumatoid arthritis, tendinopathies, and ligament injuries are all covered. • Learn about the mechanisms and treatment of sports injuries such as sprains, strains, dislocations, and overuse injuries. • Learn about orthopedic surgical treatments like joint replacements, arthroscopy, and fracture fixation. • Ability to create personalised rehabilitation strategies for patients with orthopedic disorders based on their specific requirements and goals.




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		<ul style="list-style-type: none"> • Pain and discomfort linked with orthopedic diseases are managed with modalities such as heat, ice, and electrotherapy.
	Physiotherapy in orthopaedics and sports	<ul style="list-style-type: none"> • Learn how to give physiotherapy care to patients prior to and following orthopedic surgery, including pain management, mobility training, and rehabilitation. • To improve joint and muscle function, learned manual therapy techniques such as joint mobilization, soft tissue mobilization, and myofascial release. • Create and implement therapeutic exercise regimens for patients with orthopedic disorders to increase strength, flexibility, and functional capacity. • Rehabilitation methods improve functional independence and quality of life in people with orthopedic problems. • Biomechanical Evaluation
	Physiotherapy in community health and project	<ul style="list-style-type: none"> • Understand the idea of community-based rehabilitation (CBR) and its role in improving functional independence in the community for people with disabilities. • Understand the fundamentals of community-level emergency planning and response, including disaster management and public health emergencies. • Learn how to gather, analyze, and evaluate health-related data to help with decision-making and project evaluation.




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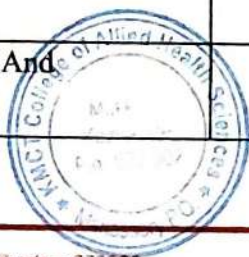
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BACHELOR OF SCIENCE IN MEDICAL LABORATORY TECHNOLOGY (B. Sc MLT)

YEAR OF STUDY	COURSE	COURSE OUTCOMES
I Year	Anatomy	<ul style="list-style-type: none"> Learn about the musculoskeletal system, neurological system, cardiovascular system, respiratory system, digestive system, urinary system, and reproductive system are all covered in-depth in this course. It covers both microscopic anatomy (histology) and gross anatomy
	Physiology	<ul style="list-style-type: none"> This fundamental subject examines how the human body typically functions, covering the physiology of numerous organ systems. The reproductive system, etc.. Students gain understanding of how physiological factors such as blood pressure, heart rate, and respiration rate relate to health and disease as well as how to evaluate physiological data.
	Biochemistry I	<ul style="list-style-type: none"> Learn about the introduction and structure of metabolism and physical chemistry
	Basic Microbiology and Immunology	<ul style="list-style-type: none"> It deals with basic immune mechanisms and general microbiology include bacterial morphology, staining and sterilization instruments
	Basic Medical Laboratory Science and Haematology I	<ul style="list-style-type: none"> It mainly deals with developmental stages of all blood cells and examination of abnormal and normal blood cells Learn about microscope working principle and its parts.
II Year	Biochemistry II	<ul style="list-style-type: none"> Deals with bio metabolism, vitamins, and nutrition.
	General Microbiology	<ul style="list-style-type: none"> Inoculating method Bacterial genetics Media preparation
	Parasitology And Entomology	<ul style="list-style-type: none"> Study information about parasites and insects which infect humans' body



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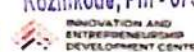
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	Haematology II And Clinical Pathology	<ul style="list-style-type: none"> It mainly deals with peripheral smear examination of abnormal conditions of blood cells, examination of body fluids and other specimens.
III Year	Biochemistry III	<ul style="list-style-type: none"> Helps to analyse principle and procedure of electrophoresis and chromatography techniques.
	Bacteriology	<ul style="list-style-type: none"> It provides information on all human-infecting bacteria, including their morphology, clinical characteristics, and lab diagnoses.
	Cytology and Transfusion Technology	<ul style="list-style-type: none"> Clinical and technical aspects of blood bank and cytology of different cells and cytopathological techniques
	Computer Application, Research Methodology, Biostatistics and Laboratory Management	<ul style="list-style-type: none"> MS office LAN Biostatistics Lab management
IV Year	Biochemistry IV	<ul style="list-style-type: none"> It deals with mineral metabolism and estimation, function test of hormones
	Micology, Virology and Applied Microbiology	<ul style="list-style-type: none"> It provides medical importance to fungus and viruses and examination of air, water, milk and food . And also deals with molecular diagnostic methods like PCR
	Histotechnology And Cytogenetics	<ul style="list-style-type: none"> Deals with clinical and technical knowledge about tissue processing Common Human Genetics abnormality Karyotyping Histopathological staining
	Project	<ul style="list-style-type: none"> The final year of study could see students working on a research project or a thesis. Students might examine a particular area and carry out individual research as part of this project.




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BACHELOR OF SCIENCE IN OPTOMETRY (B.Sc OPTOMETRY)

YEAR OF STUDY	COURSE	COURSE OUTCOMES
I Year	GENERAL ANATOMY	<ul style="list-style-type: none"> ● Develop a comprehensive understanding of the anatomical structures and systems of the human body relevant to optometry. ● Gain knowledge and skills in identifying and describing the anatomical structures of the head, neck, and eye. ● Understand and apply the principles of human physiology to comprehend the functions and interactions of anatomical structures in the visual system. ● Develop proficiency in identifying and describing the major anatomical components of the eye, including the cornea, lens, retina, and optic nerve. ● Gain knowledge and skills in understanding and interpreting the anatomical relationships between ocular structures and their impact on visual function. ● Understand and apply the principles of ocular adnexa anatomy, including the eyelids, lacrimal system, and extra ocular muscles. ● Develop skills in performing and interpreting anatomical measurements and assessments relevant to optometry, such as pupillary reflexes or ocular motility. ● Gain knowledge and skills in understanding and interpreting the anatomical basis of common eye diseases and conditions. ● Understand and apply the principles of ocular embryology and development to comprehend the formation and growth of ocular structures. ● Stay updated on current research and advancements in the field of anatomical knowledge relevant to optometry.



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	GENERAL PHYSIOLOGY	<ul style="list-style-type: none">● Develop a comprehensive understanding of the physiological processes that underlie normal functioning of the human body, with a focus on systems relevant to optometry.● Gain knowledge and skills in understanding and interpreting the principles of cell physiology, including cellular metabolism, membrane transport, and cellular communication.● Understand and apply the principles of neurophysiology to comprehend the function and integration of the nervous system in vision and ocular function.● Develop proficiency in understanding and interpreting the principles of cardiovascular physiology and their relevance to ocular blood flow and perfusion.● Gain knowledge and skills in understanding and interpreting the principles of ocular physiology, including the mechanisms of vision, intraocular pressure regulation, and tear film dynamics.● Understand and apply the principles of respiratory physiology to comprehend the oxygenation and gas exchange processes relevant to ocular health.● Develop skills in understanding and interpreting the principles of renal physiology and their impact on fluid and electrolyte balance in the body.● Gain knowledge and skills in understanding and interpreting the principles of endocrine physiology and their influence on ocular health and function.● Understand and apply the principles of immune physiology and their relevance to ocular inflammation and immune-mediated ocular diseases.● Stay updated on current research and advancements in the field of physiological knowledge relevant to optometry.
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	OCULAR ANATOMY	<ul style="list-style-type: none">● Develop a comprehensive understanding of the anatomical structures and systems of the eye and adnexa.● Gain knowledge and skills in identifying and describing the major anatomical components of the eye, including the cornea, lens, retina, and optic nerve.● Understand and apply the principles of ocular embryology and development to comprehend the formation and growth of ocular structures.● Develop proficiency in identifying and describing the major anatomical components of the adnexa, including the eyelids, lacrimal system, and extra ocular muscles.● Gain knowledge and skills in understanding and interpreting the anatomical relationships between ocular structures and their impact on visual function.● Understand and apply the principles of ocular histology to comprehend the cellular and tissue-level structures of the eye.● Develop skills in performing and interpreting anatomical measurements and assessments relevant to optometry, such as pupillary reflexes or ocular motility.● Gain knowledge and skills in understanding and interpreting the anatomical basis of common eye diseases and conditions.● Understand and apply the principles of ocular imaging techniques, such as ultrasound or optical coherence tomography (OCT), for anatomical evaluation.● Stay updated on current research and advancements in the field of ocular anatomy and its relevance to optometric practice.
	OCULAR PHYSIOLOGY	<ul style="list-style-type: none">● Develop a comprehensive understanding of the physiological processes that underlie normal functioning of the visual system.● Gain knowledge and skills in understanding and interpreting the principles of ocular physiology, including the mechanisms of vision, intraocular pressure regulation, and tear film dynamics.



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		<ul style="list-style-type: none"> • Understand and apply the principles of neurophysiology to comprehend the function and integration of the nervous system in vision and ocular function. • Develop proficiency in understanding and interpreting the principles of ocular blood flow and perfusion, and their significance in maintaining ocular health. • Gain knowledge and skills in understanding and interpreting the principles of ocular electrophysiology, including the electroretinogram (ERG) and visual evoked potentials (VEP). • Understand and apply the principles of retinal physiology and its role in phototransduction and visual signal processing. • Develop skills in understanding and interpreting the principles of ocular fluid dynamics, including aqueous humor production, circulation, and drainage. • Gain knowledge and skills in understanding and interpreting the principles of ocular surface physiology, including tear production, composition, and function. • Understand and apply the principles of ocular motility and binocular vision to comprehend the coordination and control of eye movements. • Stay updated on current research and advancements in the field of ocular physiology, including emerging technologies and techniques.
	<p>PHYSICAL OPTICS AND GEOMETRICAL OPTICS</p>	<ul style="list-style-type: none"> • Develop a comprehensive understanding of the principles and concepts of physical and geometrical optics as applied to optometry. • Gain knowledge and skills in understanding and interpreting the behavior of light, including reflection, refraction, diffraction, and interference. • Understand and apply the principles of geometric optics to comprehend the formation of images by lenses and mirrors. • Develop proficiency in performing and interpreting calculations related to image



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		<p>formation, including determination of image position, magnification, and focal length.</p> <ul style="list-style-type: none">• Gain knowledge and skills in understanding and interpreting the principles of wave optics and their application in understanding the properties of light.• Understand and apply the principles of polarization and its significance in various optical systems, including the human visual system.• Develop skills in understanding and interpreting the principles of optical instruments used in optometric practice, such as ophthalmoscopes, retinoscopes, and slit lamps.• Gain knowledge and skills in understanding and interpreting the principles of optical aberrations and their impact on visual quality.• Understand and apply the principles of optical coherence tomography (OCT) and its application in diagnosing and managing ocular conditions.• Stay updated on current research and advancements in the field of physical and geometrical optics and their applications in optometric practice.
	CHEMISTRY	<ul style="list-style-type: none">• Develop a solid understanding of basic chemical principles and concepts relevant to optometry.• Apply knowledge of chemical properties and reactions to understand the composition and behavior of materials used in optometric practice, such as contact lenses, lens materials, and ophthalmic solutions.• Understand and apply principles of organic and inorganic chemistry to comprehend the structure and function of organic compounds and inorganic substances relevant to optometry.• Develop skills in performing and interpreting chemical laboratory tests and measurements, such as pH testing or chemical analysis of ophthalmic solutions.• Understand and apply principles of chemical kinetics and thermodynamics to evaluate the





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		<p>stability and shelf life of ophthalmic products and medications.</p> <ul style="list-style-type: none"> • Understand the principles of toxicology and chemical safety as it relates to the handling and use of chemicals in optometric practice. • Apply knowledge of chemical interactions and reactions to understand the mechanisms of action and potential side effects of ophthalmic medications. • Understand and apply principles of spectroscopy and chromatography to analyze and identify chemical substances in optometric practice. • Communicate chemical concepts and information effectively to colleagues and patients in a clear and concise manner. • Stay updated on current research and advancements in the field of chemical applications in optometry.
	ENGLISH	<ul style="list-style-type: none"> • Develop proficiency in written and oral communication skills in the English language. • Enhance vocabulary and grammar skills to effectively communicate with patients, colleagues, and other healthcare professionals. • Improve reading comprehension skills to understand and analyze scientific literature and research papers related to optometry. • Develop skills in writing professional and technical documents, such as patient reports, research papers, and case studies. • Enhance listening and speaking skills to effectively communicate with patients, understanding their concerns and providing clear instructions. • Understand and apply medical terminology specific to optometry to communicate effectively within the field. • Enhance critical thinking and analytical skills through reading and discussing various topics related to optometry and healthcare. • Develop skills in presenting information and research findings in a clear, concise, and professional manner.





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		<ul style="list-style-type: none">• Understand and apply ethical considerations in written and oral communication, including patient confidentiality and cultural sensitivity.• Stay updated on current research and advancements in the field of optometry through reading and understanding scholarly publications.
	MATHEMATICS	<ul style="list-style-type: none">• Develop a solid understanding of mathematical concepts and principles relevant to optometry.• Apply mathematical calculations and problem-solving skills in optometric practice, such as determining prescription powers, calculating lens thickness, and interpreting diagnostic test results.• Understand and apply statistical analysis methods to evaluate and interpret research data in optometry.• Develop skills in interpreting and analyzing mathematical models and graphs used in optometric research and clinical practice.• Apply mathematical principles to understand and interpret optical concepts, such as refraction, visual acuity, and lens design.• Understand and apply mathematical formulas and equations used in optometric calculations and measurements.• Develop critical thinking and analytical skills through mathematical reasoning and logical problem-solving.• Utilize mathematical tools, such as calculators and computer software, to perform complex calculations and analyze data.• Communicate mathematical concepts and calculations effectively to colleagues and patients in a clear and concise manner.• Stay updated on current research and advancements in the field of mathematical applications in optometry.




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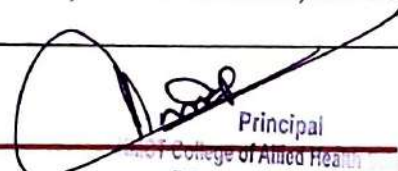
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II Year	NUTRITION, BIOCHEMISTRY	<ul style="list-style-type: none"> ● Demonstrate an understanding of the basic principles of nutrition and its relationship to ocular health. ● Apply knowledge of macro and micronutrients to assess and recommend appropriate dietary interventions for maintaining optimal eye health. ● Evaluate and interpret the impact of diet and nutritional deficiencies on ocular diseases and conditions such as cataracts, macular degeneration, and dry eye syndrome. ● Analyze the biochemical processes involved in eye development, visual signal transmission, and visual cycle. ● Understand the interaction of nutrients with ocular tissues and structures, such as the cornea, lens, and retina. ● Assess the impact of systemic diseases such as diabetes and hypertension on ocular health and apply appropriate nutritional and biochemical interventions. ● Evaluate and interpret laboratory tests related to nutritional status and identify biochemical markers of ocular health. ● Recognize the importance of evidence-based practice in the field of nutrition and biochemistry in optometry and apply current research findings to clinical practice. ● Counsel patients on appropriate dietary modifications and supplementation to support optimal eye health. ● Adhere to ethical and legal principles related to patient confidentiality and informed consent when integrating nutrition and biochemistry into optometric practice.
	PHARMACOLOGY	<ul style="list-style-type: none"> ● Understand the fundamental principles of pharmacology and their application to optometric practice. ● Identify and classify commonly used ophthalmic medications, including their mechanisms of action, indications, contraindications, and side effects.




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		<ul style="list-style-type: none"> ● Develop skills in prescribing and administering ophthalmic medications, including proper dosage calculations and techniques. ● Understand the pharmacokinetics and pharmacodynamics of ophthalmic drugs, including absorption, distribution, metabolism, and excretion. ● Apply knowledge of pharmacology to select appropriate medications for the treatment and management of common ocular conditions, such as glaucoma, ocular allergies, and dry eye syndrome. ● Interpret and analyze medication profiles and medical histories to identify potential drug interactions or contraindications. ● Understand the principles of ocular drug delivery systems, such as eye drops, ointments, and contact lens drug delivery. ● Communicate effectively with patients, providing education and counseling on the proper use and potential side effects of ophthalmic medications. ● Stay updated on current research and advancements in the field of ocular pharmacology. ● Demonstrate an understanding of ethical considerations and patient confidentiality in prescribing and managing ophthalmic medications.
	MICROBIOLOGY	<ul style="list-style-type: none"> ● Understand the fundamental principles of microbiology and their relevance to ocular health and disease. ● Identify and classify microorganisms commonly encountered in ocular infections, such as bacteria, viruses, fungi, and parasites. ● Develop skills in laboratory techniques for the isolation, identification, and characterization of ocular pathogens. ● Understand the pathogenesis and clinical manifestations of ocular infections caused by different microorganisms. ● Apply knowledge of microbiology to diagnose and manage ocular infections, including



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		<p>appropriate selection and use of antimicrobial agents.</p> <ul style="list-style-type: none"> ● Interpret and analyze microbiological test results to guide treatment decisions for ocular infections. ● Understand the principles of infection control and prevention in an optometric practice setting. ● Communicate effectively with patients, providing education and counseling on the prevention and management of ocular infections. ● Stay updated on current research and advancements in the field of ocular microbiology and infectious diseases. ● Demonstrate an understanding of ethical considerations and patient confidentiality in managing ocular infections.
	PATHOLOGY	<ul style="list-style-type: none"> ● Understand the basic principles of general pathology and their application to ocular diseases. ● Identify the etiology, pathogenesis, and morphological features of common ocular diseases and conditions. ● Develop skills in recognizing and interpreting pathological changes in ocular tissues and structures through clinical examination and imaging modalities. ● Apply knowledge of pathology to diagnose and manage ocular diseases, including appropriate referral to other healthcare professionals when necessary. ● Understand the immunological and inflammatory processes involved in ocular diseases and their impact on visual function. ● Interpret and analyze laboratory and diagnostic test results relevant to ocular pathology, such as histopathology reports or genetic testing. ● Collaborate with other healthcare professionals, such as ophthalmologists or pathologists, to provide comprehensive care for patients with ocular diseases. ● Communicate effectively with patients, providing education and counseling on the



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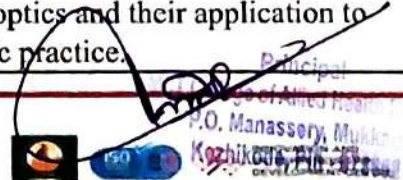
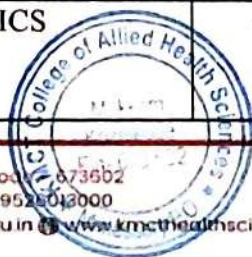


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		<p>nature, prognosis, and management of ocular diseases.</p> <ul style="list-style-type: none"> • Stay updated on current research and advancements in the field of ocular pathology. • Demonstrate an understanding of ethical considerations and patient confidentiality in managing ocular diseases.
	<p>CLINICAL EXAMINATION OF VISUAL SYSTEM AND OPHTHALMIC INSTRUMENTS</p>	<ul style="list-style-type: none"> • Develop proficiency in performing comprehensive visual examinations, including visual acuity testing, refraction, and assessment of binocular vision and eye movements. • Gain knowledge and skills in conducting specialized tests to evaluate various aspects of the visual system, such as color vision, contrast sensitivity, and visual field testing. • Understand and apply principles of ophthalmic instrumentation, including the proper use and maintenance of diagnostic instruments such as ophthalmoscopes, slit lamps, and tonometers. • Develop skills in performing and interpreting ophthalmic imaging techniques, such as optical coherence tomography (OCT) and fundus photography. • Understand and apply principles of ocular biometry and measurements, including axial length measurement and keratometry. • Develop proficiency in performing and interpreting diagnostic tests for common ocular conditions, such as glaucoma, cataracts, and retinal diseases. • Enhance knowledge and skills in conducting specialized examinations, such as contact lens fitting and assessment of low vision patients. • Develop effective communication skills to explain examination procedures and test results to patients in a clear and understandable manner. • Understand and apply ethical considerations and patient confidentiality in the performance of clinical examinations and use of ophthalmic instruments.
	<p>VISUAL OPTICS</p>	<ul style="list-style-type: none"> • Develop a solid understanding of the principles of visual optics and their application to optometric practice.





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		<ul style="list-style-type: none"> Stay updated on current research and advancements in the field of clinical examination techniques and ophthalmic instrumentation.
		<ul style="list-style-type: none"> Gain knowledge and skills in understanding and interpreting the behavior of light and its interaction with the eye and optical systems. Understand and apply the principles of geometric optics, including the laws of reflection and refraction, to understand how light is focused and refracted by the eye. Gain knowledge and skills in understanding and interpreting the properties of lenses, including lens power, focal length, and image formation. Develop skills in performing and interpreting calculations related to lens power, image formation, and optical aberrations. Understand and apply the principles of the various types of lenses used in optometric practice, including spectacle lenses, contact lenses, and intraocular lenses. Gain knowledge and skills in understanding and interpreting the factors that affect visual acuity and image quality, including aberrations, diffraction, and depth of focus. Develop skills in performing and interpreting calculations related to visual acuity, lens prescriptions, and optical corrections. Understand and apply the principles of visual perception and its relationship to visual optics, including binocular vision and visual illusions. Stay updated on current research and advancements in the field of visual optics and its applications in optometry.
	OPTOMETRIC OPTICS	<ul style="list-style-type: none"> Develop a comprehensive understanding of the principles and concepts of optometric optics. Gain knowledge and skills in understanding and interpreting the properties of ophthalmic lenses and their impact on vision correction. Understand and apply the principles of lens design and manufacturing to prescribe and dispense appropriate ophthalmic lenses for patients.





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		<ul style="list-style-type: none">• Develop skills in performing and interpreting calculations related to lens power, lens thickness, and lens selection.• Gain knowledge and skills in understanding and interpreting the principles of lens aberrations and their impact on visual quality.• Understand and apply the principles of lens materials and coatings to optimize visual comfort and performance.• Develop proficiency in performing and interpreting lensometry measurements and lens verification.• Gain knowledge and skills in understanding and interpreting the principles of contact lens optics and their application in fitting and managing contact lens patients.• Understand and apply the principles of visual ergonomics and occupational optics to address visual demands in specific work environments.• Stay updated on current research and advancements in the field of optometric optics and its applications in clinical practice.
	<p>INFORMATION TECHNOLOGY</p>	<ul style="list-style-type: none">• Understand and utilize various information technology tools and software applications commonly used in optometry practice.• Develop skills in managing electronic health records (EHR) and effectively documenting patient information.• Demonstrate proficiency in using digital imaging and diagnostic equipment for eye examinations and analysis.• Apply information technology principles and concepts to optimize patient care and enhance clinical decision-making processes.• Analyze and interpret data collected through information technology tools to support evidence-based practice in optometry.• Develop effective communication skills using technology platforms to engage with patients, colleagues, and other healthcare professionals.• Comply with ethical and legal considerations in the use of information technology in optometry



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		<p>practice, including patient privacy and data security.</p> <ul style="list-style-type: none"> ● Evaluate emerging technologies and trends in the field of optometry and understand their potential impact on the profession. ● Collaborate with interdisciplinary teams in utilizing information technology for patient-centered care and efficient practice management. ● Demonstrate critical thinking and problem-solving abilities in troubleshooting and resolving technical issues related to information technology in optometry.
III Year	EYE DISEASES	<ul style="list-style-type: none"> ● Develop a comprehensive understanding of common eye diseases and conditions encountered in optometric practice. ● Gain knowledge and skills in identifying and diagnosing various eye diseases and conditions based on clinical signs, symptoms, and patient history. ● Understand and apply the principles of ocular pathology to comprehend the underlying mechanisms and processes involved in the development and progression of eye diseases. ● Develop proficiency in performing and interpreting diagnostic tests and procedures used in the evaluation and management of eye diseases, such as slit-lamp biomicroscopy, tonometry, and fundus examination. ● Gain knowledge and skills in understanding and interpreting the management and treatment options for different eye diseases and conditions, including pharmacological interventions, surgical procedures, and lifestyle modifications. ● Understand and apply the principles of ocular pharmacology to comprehend the mechanisms of action, indications, and side effects of commonly used medications in the treatment of eye diseases. ● Develop skills in communicating and educating patients about their eye diseases, treatment options, and preventive measures.



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		<ul style="list-style-type: none"> Gain knowledge and skills in understanding and interpreting the epidemiology and risk factors associated with various eye diseases, including age-related macular degeneration, glaucoma, diabetic retinopathy, and cataracts. Understand and apply the principles of evidence-based practice in the diagnosis and management of eye diseases, integrating current research and clinical guidelines. Stay updated on current research and advancements in the field of eye diseases and their management in optometric practice.
	CONTACT LENS	<ul style="list-style-type: none"> Study regarding contact lenses involves a range of topics related to their design, materials, fitting, usage, and impact on ocular health. Acquire knowledge on the wide range and variety of contact lenses used in different conditions
	BINOCULAR SINGLE VISION AND SQUINT	<ul style="list-style-type: none"> Gain a thorough understanding of how the binocular vision system normally operates, including convergence, depth perception, accommodation, and stereopsis. Learn about the neural pathways involved in binocular vision and the coordination between the eyes. Learn about the normal development of binocular vision in infants and children. Understand the importance of early detection and intervention in the prevention of amblyopia (lazy eye) and other visual impairments. Learn various clinical tests and procedures to assess and diagnose binocular vision disorders such as strabismus, convergence, insufficiency and phorias. Comprehend how to interpret test results and design suitable treatment plans. Learn about the non-surgical and surgical management options for binocular vision disorders. Understand the role of vision therapy ,orthoptic exercises, prism correction and surgical interventions in the treatment of squint disorders. Learn how to explain binocular vision disorders and treatment options to patients in a clear and





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		empathetic manner. Understand the importance of care and patient-centered management.
	LOW VISION AIDS	<ul style="list-style-type: none"> Learn to evaluate, assess, diagnose and treat a patient's visual impairment and prescribing appropriate low vision aids to enhance the quality of life. Promote visual rehabilitation
	COMMUNITY OPTOMETRY	<ul style="list-style-type: none"> Understand the role of optometry in the context of community healthcare and public health. Identify the unique eye care needs and challenges of different population groups, such as children, older adults, and individuals with specific health conditions. Develop skills in conducting community needs assessments and identifying eye health disparities within different communities. Apply principles of health promotion and disease prevention to promote eye health and raise awareness about the importance of regular eye examinations. Collaborate with community organizations, healthcare professionals, and policymakers to develop and implement eye care programs and initiatives. Demonstrate effective communication and counseling skills to educate individuals and communities on eye health, vision care, and appropriate eyewear. Understand the cultural, social, and economic factors that influence eye care accessibility and utilization within communities. Analyze and interpret epidemiological data related to eye diseases and conditions to inform community-based interventions and public health strategies. Evaluate the effectiveness of community-based eye care programs and interventions in improving eye health outcomes. Demonstrate an understanding of ethical considerations and cultural sensitivity in providing optometric services within diverse communities.



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	SYSTEMIC DISEASES	<ul style="list-style-type: none">• Understand the relationship between systemic diseases and their impact on ocular health and visual function.• Identify the signs and symptoms of common systemic diseases that can manifest in the eye, such as diabetes, hypertension, and autoimmune disorders.• Develop skills in conducting comprehensive patient history taking and systemic health assessments to identify potential ocular manifestations or complications.• Apply knowledge of systemic diseases to recognize and manage ocular conditions associated with these diseases, such as diabetic retinopathy or hypertensive retinopathy.• Interpret and analyze relevant diagnostic tests and imaging modalities to assess ocular health and detect systemic disease-related eye complications.• Collaborate with healthcare professionals from different disciplines to provide holistic care for patients with systemic diseases.• Understand the pharmacological management of systemic diseases and their potential ocular side effects.• Communicate effectively with patients, providing education and counseling on the relationship between systemic health and ocular health.• Stay updated on current research and advancements in the field of systemic disease and its impact on optometric practice.• Demonstrate an understanding of ethical considerations and patient confidentiality in managing ocular conditions related to systemic diseases.
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BACHELOR OF SCIENCE IN PERFUSION TECHNOLOGY

(B. Sc PERFUSION TECHNOLOGY)

YEAR OF STUDY	COURSE	COURSE OUTCOMES
I Year Perfusion technology	Anatomy	<ul style="list-style-type: none"> Learn about the structure of living things. Helps us to understand the physical status of the patients.
	Physiology	<ul style="list-style-type: none"> Learn about how the human body functions. Understand the mechanism of human structure. Mechanism in which the human body works both when you are healthier and when you are unhealthier.
	Biochemistry	<ul style="list-style-type: none"> Deals with the life processes of living organisms at both biological and chemical levels. Helps to study about the chemical process that takes place in the human body. Knowledge about the diagnosis of various diseases.
	Pathology	<ul style="list-style-type: none"> Deals with the study of disease, specifically the initial course of etiology, pathogenesis and their effects on normal structure and function.
	Microbiology	<ul style="list-style-type: none"> Understand about the disease causing microorganisms such as bacteria, fungi, parasites, viruses. Learn about how to manage or dispose the biomedical waste that are generated from hospitals, industry etc Learn about sterilization methods both physical and chemical methods
II Year	Introduction to perfusion technology	<ul style="list-style-type: none"> Gain knowledge on the basics of CPB. Monitoring during CPB. Learning the basic thing before doing the perfusion.
	Pharmacology	<ul style="list-style-type: none"> Aims to study the drugs, classification and uses, its mechanism of action, adverse drug effect, contraindications and treatment.
	General medicine	<ul style="list-style-type: none"> Deals with a wide range of diseases that affect the internal organs of the body including heart, liver, kidney, respiratory system, gastrointestinal system, reproductive system, etc.





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		<ul style="list-style-type: none"> Identify and understand the etiology, pathogenesis, treatment and management.
	Applied microbiology	<ul style="list-style-type: none"> Learn the application of disease caused due to microorganisms and hospital acquired infections Understand environmental surveillance, controlled measures. Understand needle stick injury Know the standard precautions and transmission-based precautions and about CSSD.
	Applied pathology	<ul style="list-style-type: none"> Understand the clinical pathology of organisms concerned with diagnosis and treatment of disease, pathogenesis, etiology of organism, management and treatment.
III Year	Perfusion technology clinical	<ul style="list-style-type: none"> Analyze the mechanism and function of the CPB circuit, conduct of CPB and Termination. Know the drugs used in CPB and Cannulation during CPB. Role of Myocardial protection and oxygenators. Understand the role of pulsatile perfusion.
	Perfusion technology applied	<ul style="list-style-type: none"> Understand anticoagulation during CPB, blood conservation techniques, hemofiltration methods, and management of micro emboli. Learn about microspore filtration methods and Advanced machines in cardiac surgery like IABP & VAD. Know the inflammatory response to CPB and blood cell traumas.
	Perfusion technology advanced	<ul style="list-style-type: none"> Understand the paediatric cardiac surgery and Complications during CPB. Know the safety precautions during CPB, recent advances in perfusion technology. Develop insight on experimental perfusion.



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