SRM MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE

Key indicator.2.6. Students Performance and Learning Outcomes (30)

2.6.1 Program outcomes (Pos), program specific outcome (PSOs) and Course outcome (Cos) for all programs offered by the institution are stated and displayed on website and communicated to teachers and students department

SUPERSPECIALITY COURSES

D.M. CARDIOLOGY

Program outcomes	The aim of the course is to impart thorough and comprehensive training to the candidate in the various aspects of cardiology so that at the end of the course he/she shall be able to perform the following • Recognize the importance of Cardiology in the context of the health needs of the community and national priorities in the health sector. • Practice Cardiology ethically and in step with the principles of primary health care. • To be able to diagnose and manage cardiovascular diseases on the basis of clinical assessment, and appropriately selected and conducted investigations. • To be able to carry out efficient management of all types of cardiovascular Emergencies after quickly assessing the patient and synthesizing available clinical and Investigational information. • To be able to identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive, and promotive measures/strategies. • To keep abreast of the current knowledge and recent advances in the field by self learning and /or participating in Continuing Medical Education Programmes. • To organize and manage administrative responsibilities for routine day to day work as well as emergent /urgent situations • Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation. • To understand the functional principles of various biomedical equipments used in invasive and non invasive cardiology. • To develop understanding and working knowledge of the sophisticated and routine equipments and consumables used in Cardiology. • Demonstrate competence in basic concepts of research methodology, epidemiology and publication. • To be able to critically analyse relevant published research literature and use them appropriately to influence practice of cardiovascular medicine. • Develop skills in using educational methods and techniques as

	applicable to the teaching of medical/paramedical students/staff, general physicians and paramedical health workers. To be able to develop learning resource material for courses in cardiology. • To develop reasonable understanding of the recent advances in the allied specialities in the institution and be able to offer consultations to the other departments
Program specific outcomes	• To diagnose cardiovascular diseases based on clinical methods. • To interpret relevant laboratory, radiological and cardiac investigations for the purpose of diagnosis. • To arrive at a treatment plans based on 1 & 2 and discuss the pros and cons with the patient and his family. • Be able to carry out efficient management of all types of cardiovascular Emergencies after quickly assessing the patient and synthesizing available clinical and investigational information. To keep abreast of the current knowledge and recent advances in the field by self learning and /or participating in Continuing Medical Education Programmes. • To deliver preventive and rehabilitative care. • To organize and manage administrative responsibilities for routine day to day work as well as emergent /urgent situations. • To understand the functional principles of various biomedical equipments used in invasive and non invasive cardiology. . To carry out research and publications in the field. • To teach the medical and other paramedical students/staff and develop learning resource material for them.The student would be given adequate training during the course so that he/she will be able to perform and interpret various non-invasive and invasive techniques. • To adopt ethical practices in dealing with patients, colleagues, subordinates superiors and health care workers. 2. To promote cordial interpersonal relation 3. To perform as a team 4. To learn to be a leader when the need arises. 5. To learn to order investigations and prescribe drugs rationally. 6. To be aware of ethical issues in human and animal research. 7. Take rationale decision in the face of ethical dilemmas in cardiac diseases.
Course outcomes	At the end of the course the students should be • Competent super specialists capable of providing care of the highest order to the cardiac patients in the community as well as clinical tertiary care centres. They would subsequently serve as teachers, trainers, consultants, researchers and leaders in the field of Cardiology. They shall recognize the health needs of the community, carry out professional obligations ethically, in keeping with the objectives of the National Health Policy.

DM. NEPHROLOGY

Program outcomes	At the end of the DM Nephrology, the student should be able to • Practice the specialty of nephrology in keeping with the principles

	of professional ethics • Recognize and identify the various renal problems • Institute diagnostic, therapeutic, rehabilitative and preventive measures to provide holistic care to the patient • Take detailed history, perform full physical examination and make clinical diagnosis, perform relevant investigative and therapeutic procedures interpret important imaging and laboratory results • Independently perform basic surgical procedures and manage emergency efficiently • Demonstrate empathy and human approach towards patients and their families. • Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education to patients, families and communities, • Develop skills as a self-directed learner, recognize continuing educational needs, use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based medicine, facilitate learning of medical/nursing students, practicing physicians, paramedical health workers and other providers as a teacher/trainer organize and supervise the desired managerial and leadership skills
Program specific outcomes	• To acquaint himself/herself with the past and current literature on relevant aspects of basic, investigative and clinical nephrology. • To acquire performance skills for diagnostic and therapeutic procedures and interventions. • To diagnose, plan and interpret investigations and treat various acute and chronic kidney ailments by relevant therapeutic methods. • To identify, frame and carry out research proposals in the speciality. • To acquire thorough knowledge of internal medicine and allied general and clinical disciplines to ensure appropriate and timely referrals. • To acquaint with relevant education delivery system to be able to function as a health educator.
Course outcomes	• At the end of the course the students should be a competent nephrologists who: Has acquired the competence pertaining to Nephrology that is required to be practiced in the community and at all levels of health care system • Has acquired the skills to manage the patient effectively pertaining to nephrology • Has acquired skill in effectively communicating with patient and his attendants. • Has the desired skills to independently manage emergency cases • Is aware of the latest developments in the field of nephrology oriented to principles of research methodology • Has acquired skills in educating medical and paramedical professionals

DM. NEUROLOGY

	At the end of the course, upon successful completion of training and passing the examination the student is expected to

Program outcomes	• Acquire comprehensive knowledge of the basics of Neurology including all allied specialities related to Neurology like Neuroanatomy, Neurophysiology, Neurochemistry, Neuropharmacology, Neuroimaging, Neuropathology, Neuroinfections, Neuroimmunology, Preventive Neurology, Neuroepidemiology, Paediatric Neurology and Neurosurgery. • Possess a complete knowledge of all the commonly used Neurophysiological diagnostic Tests like Electroencephalography, Electromyography, evoked Potentials. • Possess knowledge of the recent advances in the subject of Neurology and all its allied specialities and working knowledge of the sophisticated and routine equipments, consumables used in Neurology especially with respect to Neurochemistry, Neurogenetic and molecular diagnostic techniques. • Possess knowledge of principles of research work in the field of Neurology in both the Clinical and experimental field with the ability to analyse data. • Acquire knowledge in the performance and interpretation of special investigations such as Polysomnography, Video EEG, autonomic function tests, Transcranial Doppler tests. • Acquire knowledge in interpretation of common neuroimaging investigations such as CT scanning, MRI scanning, MR and Digital subtraction angiography, MR spectroscopy and Single Photon Emission Computerised Tomography. • Diagnose and manage majority of conditions in the specialty of Neurology on the basis of clinical assessment, and appropriate investigations. • Possess complete Clinical Diagnostic Skills for the recognition of common Nervous system diseases. • Acquire skills in the performance and interpretation of special investigations such as Polysomnography, Video EEG monitoring, EEG-Telemetry, autonomic function tests, Transcranial Doppler tests. • Acquire skills in invasive procedures such as lumbar puncture, intrathecal drug administration, CSF manometry; assisting in digital subtraction angiography and intraarterial thrombolysis; and Nerve and muscle biopsy and their interpretation of relevant histopathology. Acquire exposure in sophisticated neuromodulation procedures such as planning of deep brain stmulation, vagal nerve stimulation. • Able to apply sound clinical judgement and rational cost effective investigations for the diagnosis and management of Neurology Cases in the OPD, Wards, Emergency Room and Intensive Care unit. • Be able to teach undergraduate students MBBS and Post Graduate Students MD Med or Pediatrics or Psychiatry as well as investigative Neurology. • Be able to perform Clinical and Investigative studies and to present

	in Seminars, meetings and conferences etc. • Have the ability to organise specific teaching and training programmes for para medical staff, associated professionals and patient education programmes. • Should be able to develop good communication skills and give consultations to all other departments of the hospital. • Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation. • Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behaviour in accordance with the societal norms and expectation. • Develop skills as a self-directed learner, recognise continuing educational needs: select and use appropriate learning resources. Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers
Program specific outcomes	• Demonstrate sufficient understanding of knowledge in the subject of neurology • Develop ability to take deserving history from the patient, perform relevant clinical examination, decide appropriate investigation and devise the management plan • Should be able o interpret the investigations independently • Confident of performing common procedure • Develop effective communication with patients, family, collegues and students
Course outcomes	• At the end of the course the student should have a thorough and comprehensive knowledge in the various aspects of the specialty to enable him: 1. to function as Faculty/consultants in the specialty 2. To plan and set up independent Neurology Unit catering to clinical and investigative Neurology 3. to carry out and help in conducting applied research in Neurosciences

M.Ch CARDIO THORACIC SURGERY

Program outcomes	At the end of the course the students should be able to • Acquire basic knowledge of Anatomy & Physiology related to the practice of Cardio Thoracic and Vascular surgery. • Acquire basic knowledge of Cardiology, Chest medicine, Critical care Management & Imaging technology related to Cardio Thoracic and Vascular surgery. • Acquire knowledge of causes and principles underlying the uses of drugs & therapeutic procedures for restoring the deranged structures and functions to normalcy.

	• Demonstrate the ability to critically evaluate recent Medical literature from journals, update knowledge & adopt diagnostic and therapeutic procedures • Develop familiarity with diagnostic skills & laboratory procedures relevant to the diagnosis & evaluation of the patient under his / her care and able to conduct some of these procedures in case it becomes necessary to do so. • Develop comprehensive knowledge of theoretical aspects of Cardio Thoracic and Vascular surgery including recent advances. Acquire the knowledge of Ethics and Medico-legal aspects related to the practice of CT surgery. • Special Emphasis on diseases prevalent in our Country 9) Adequate knowledge, skills and competence of Diagnosis, Treatment and prognosis of Cardio Thoracic and Vascular surgery disorders. • Principles of management of Cardiothoracic Emergencies and trauma • Adequate proficiency in management of pre-operative and postoperative patients. • Knowledge of basic principles , management of common & emergencies in other specialties like critical care, common medical disorders, metabolic disorders, Cardiac problems & congenital malformations • Familiarize with basic principles of Anesthesiology & Resuscitative measures
Program specific outcomes	In general terms, by the end of training, surgeons have to demonstrate: Theoretical and practical knowledge related to surgery in general and to their specialty practice; • Technical and operative skills; • Clinical skills and judgement • Generic professional and leadership skills; • An understanding of the values that underpin the profession of surgery and the responsibilities that come with being a member of the profession • The special attributes needed to be a surgeon; • A commitment to their ongoing personal and professional development and practice using reflective practice and other educational processes; • An understanding and respect for the multi-professional nature of healthcare and their role in it; and • An understanding of the responsibilities of being an employee of an NHS trust, hospital and/or a private practitioner. In the final stage of training, when the trainee has attained the knowledge and skills required for the essential aspects of the curriculum in their chosen speciality, there will be the opportunity to extend his/her skills and competences in one or two specific fields. The final stage of the syllabus covers the major areas of specialised practice. The syllabuses are intended to allow the CCT holder to develop a particular area of clinical interest and expertise prior to

	appointment to a consultant post. Some will require further post CCT training in order to achieve the competences necessary for some of the rarer complex procedures. In some specialties, interface posts provide this training in complex areas pre CCT.
Course outcomes	• at the end of the course the students should be a competent Cardio Thoracic and Vascular surgeon who shall: • Provide the health care to patients needing Cardiothoracic Surgical care Teach & train future undergraduate and postgraduate medical students in Medical Colleges, Institutions, Hospitals including those for Nursing and Allied Health Workers • Conduct and guide research to improve the practice the art and Science of Surgery. • Manage personnel &cost effective health care • Organize health teams to provide care during natural or manmade calamities • Develop further acumen & skills in the area of their interest vii. Provide comprehensive and good quality surgical care including pre-operative and postoperative care • Conduct research and communicate the findings , results and conclusions to his fraternity • Keep pace with the latest developments by self-learning and/ or participating in continuing medical education programmes. • Organize & manage administrative responsibilities for routine day to day work as well as situations including natural and / or man-made accidents xi. Manage emergency interventions in the sphere of surgical specialties and also routine problems in their areas. • Develop his / her knowledge, skills and attitudes of his /her areas of interest and become specialist in Allied Specialties. xiii. Exhibit awareness of the importance of surgical audit and the need for considering cost-effective patient management. xiv. Be aware of one's professional limitation and able to refer to appropriate centers at the optimum time • Exhibit awareness of the need for accurate documentation in medical records including Medico-legal cases. xvi. Adopt ethical procedures in the field of Doctor- patient relati

M.Ch NEROSURGERY

Program outcomes	At the end of the course, upon successful completion of training and passing the examination the student is expected to • Acquire comprehensive knowledge of the basics of neurosurgery including all allied specialities related to neurosurgery like Neuroanatomy, neuropathology, Neuroinfections, neuroimmunology, Preventive Neurology, Neuroepidemiology, Paediatric Neurology.

	• Possess a complete knowledge of all the commonly used Neurosurgery procedure diagnostic tests like Electroencephalography, evoked Potentials, etc • . Possess knowledge of the recent advances in the subject of Neurosurgery and all its allied specialities and working knowledge of the sophisticated and routine equipments, consumables used in Neurosurgery especially with respect to Neurochemistry, neurogenetic and molecular diagnostic techniques. • Possess knowledge of principles of research work in the field of Neurology and Neurosurgery in both the clinical and experimental field with the ability to analyse data.Acquire knowledge in the performance and interpretation of special investigations such as Polysomnography, Video EEG, autonomic function tests, Transcranial Doppler tests, Magnetic Electrical Stimulations. • Acquire knowledge in interpretation of common neuroimaging investigations such as CT scanning, MRI scanning, MR and Digital subtraction angiography, MR spectroscopy and Single Photon Emission Computerized Tomography • Diagnose and manage majority of conditions in the specialty of Neurosurgery on the basis of clinical assessment, and appropriate investigations. • Possess complete clinical Diagnostic Skills for the recognition of common Nervous system diseases. • Acquire skills in the performance and interpretation of special investigations such as Polysomnography, Video EEG monitoring, EEG – Telemetry, autonomic function tests, Transcranial Doppler tests. • Acquire skills in invasive procedures such as lumbar puncture, intrathecal drug administration, CSF manometry; assisting in digital subtraction angiography and intraarterial thromobolysis; and Nerve and muscle biopsy and their interpretation of relevant histopathology. • Acquire exposure in sophisticated neuromodulation procedures such as planning of deep brain stimulation, vagal nerve stimulation. • Able to apply sound clinical judgement and rational cost effective investigations for the diagnosis and management of Neurosurgery Cases in the OPD, WARDs, Emergency Room and Intensive Care Unit. • Be able to teach undergraduate students MBBS and Post Graduate Students MS General Surgery or Paediatric Surgery as well as investigative Neurosurgery. • Be able to perform Clinical and Investigative studies and to present in Seminars, meetings and conference etc • Have the ability to organise specific teaching and training programmes for para medical staff, associated professionals and

	patient education programmes. • Should be able to develop good communication skills and give consultations to all other departments of the hospital. • Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation. • Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behaviour in accordance with the societal norms and expectation. • Develop skills as self-directed learner, recognize continuing educational needs: select and use appropriate learning resources. • Develop skills in using educational methods and techniques as applicable to the teaching of medical / nursing students, general physicians and paramedical health workers
Program specific outcomes	• Should able to diagnose, plan investigations and treat common conditions in the specialty by relevant current therapeutic methods • Should be capable of imparting basic neurosurgical training • Should be acquainted with allied and general clinical disciplines to ensure appropriate and timely referral • Develop essential skill in conducting research in the specialty • Develop into an effective communicator to the patients, their family, colleagues and students
Course outcomes	At the end of the course the postgraduate students in neurosurgery is able to • Recognizes the health needs of adults and carries out professional obligations in keeping with principles of National Health Policy and professional ethics; Has acquired the competencies pertaining to neuro surgery that are required to be practiced in the community and at all levels of health care system; Has acquired skills in effectively communicating with the patients, family and the community; Is aware of the contemporary advances and developments in medical sciences. Acquires a spirit of scientific enquiry and is oriented to principles of research methodology; and has acquired skills in educating medical and paramedical professionals.

M.Ch UROLOGY

Program outcomes	At the end of the M.Ch Urology, the student should be able to • practice the specialty of urology surgery in keeping with the principles of professional ethics • recognize and identify the various surgical problems • institute diagnostic, therapeutic, rehabilitative and preventive measures to provide holistic care to the patient • take detailed history, perform full physical examination and make clinical diagnosis, perform relevant investigative and therapeutic procedures • interpret important imaging and laboratory results • Independently perform basic surgical procedures • manage surgical trauma emergency efficiently • Demonstrate empathy and human approach towards patients and their families. • demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education to patients, families and communities, • develop skills as a self-directed learner, recognize continuing educational needs, use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based surgery, facilitate learning of medical/nursing students, practicing physicians, paramedical health workers and other providers as a teacher/trainer • organize and supervise the desired managerial and leadership skills
Program specific outcomes	• Should have in-depth knowledge of the entire urology and relevant basic allied subjects. • Recognizes the health needs of adults and carries out professional obligations in keeping with principles of National Health Policy and professional ethics. • Has acquired the competencies pertaining to Urology that are required to be practiced in the community and at all levels of health care system; • Has acquired skills in effectively communicating with the patients, family and the community; • Is aware of the contemporary advances and developments in medical sciences. • Acquires a spirit of scientific enquiry and is oriented to principles of research methodology; and • Has acquired skills in educating medical and paramedical professionals.
Course outcomes	At the end of the course the students should be a competent urologist who: • Has acquired the competence pertaining to urology surgery that is required to be practiced in the community and at all levels of health care system • Has acquired the skills to manage the patients of trauma

	effectively. • Has acquired skill in effectively communicating with patient and his attendants. • Has the desired surgical skills to independently operate on elective and emergency cases • Is aware of the latest developments in the field of surgery and oriented to principles of research methodology • Has acquired skills in educating medical and paramedical professionals

M.Ch .PEDIATRIC SURGERY

Program outcomes	• At the end of the course upon successful completion of training on passing the examination the student is expected to a. • Acquire comprehensive knowledge of the basics of paediatric surgery including all allied specialties related to paediatric surgery like Embryology, Genetics, Basic Anatomy, Physiology, Biochemistry, Pharmacology, Pathology, Radioimaging, Newborn surgery, Paediatric Urology and Paediatric Neurosurgery and also Laparascopic surgery. • Possess complete knowledge of the commonly used diagnostic test like Plain Xray, Ultrasound, CT and MRI. • Possess knowledge about recent advances in the subject of Paediatric surgery and all its allied specialties. Working knowledge of the sophisticated and routine equipments, consumables used in paediatric surgery. • Possess adequate knowledge of principles of research work in the field of paediatric surgery in both Clinical and experimental field with the ability to analyse the data. • Acquire knowledge in the performance and interpretation of special investigations like Cystoscopy, laparascopy. • Acquire knowledge in common paediatric investigations such as CT scanning, MRI scanning, MRA,DSA and Single Photon Emission Computerised Tomography • . Diagnose and management of majority of the conditions in the speciality of Paediatric surgery on the basis of clinical assessment, and appropriate investigations. • . Possess complete Clinical diagnostic Skills for the recognition of common Paediatric Surgical conditions. • Acquire skills in the performance and interpretation of special investigations such as MRI, Barium enema, MCUG, IVP, Ultrasound, CT, Barium series, Doppler study, Sialogram. • Acquire skills in invasive procedures like Cystoscopy, gastroscopy, Lumbar puncture, intrathecal, Central venous access with chemotherapy administration. • Acquire exposure in sophisticated procedures like Hydrostatic reduction for Intussusceptions and intra lesional injections.

	• Able to apply sound clinical judgment and rationale cost effective investigations for the diagnosis and management of paediatric surgery cases in OPD, Wards, Emergency Room and Intensive care unit. g. Be able to teach the Postgraduate Students MS General surgery and MD Paediatrics • Be able to perform Clinical and Investigative studies and to present in Seminars, meetings and conferences etc. • Have the ability to organize specific teaching and training programmes for paramedical staff, associated professionals and patient education programmes. • should be able to develop good communication skills and give consultations to all other departments of the hospital. • Demonstrate skills in documentation of individual case details as well as morbidity data relevant to the assigned situation. • Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the social norms and expectation. • Develop skills as self-directed learner, recognize continuing educational needs: select and use appropriate learning resources. m. Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing student, general physicians and paramedical health workers
Program specific outcomes	• Theoretical and practical knowledge related to surgery in general and to their specialty practice; • Technical and operative skills; • Clinical skills and judgement; • Generic professional and leadership skills; • An understanding of the values that underpin the profession of surgery and the responsibilities that come with being a member of the profession; • The special attributes needed to be a surgeon; • A commitment to their on-going personal and professional development and practice using reflective practice and other educational processes; • An understanding and respect for the multi-professional nature of healthcare and their role in it; and • An understanding of the responsibilities of being an employee in the Indian systems and/or a private practitioner
Course outcomes	• At the end of the course the postgraduate student should have acquired both theoretical and practical knowledge to be able to function as a pediatric surgeon in a teaching/non teaching hospital with confidence and competence to diagnose and manage surgical conditions of infancy and childhood. He would also have acquired skills to identify, plan and carry out surgical treatment and the ability to transfer knowledge and skills of his specialty and thus fulfill the function of a teacher.

M.Ch **PLASTIC SURGERY**

Program outcomes	At the end of the course, upon successful completion of training and passing the examination the student is expected to • Acquire comprehensive knowledge of the basics of Plastic surgery including all allied specialties. • Possess a complete knowledge of all the commonly used plastic surgery procedure. • Possess knowledge of the recent advances in the subject of plastic surgery and all its allied specialties and working knowledge of the sophisticated and routine equipments, consumables used in plastic surgery. • Possess knowledge of principles of research work in the field of plastic surgery in both the Clinical and experimental field with the ability to usefully analyze data. • . Diagnose and manage majority of conditions in the specialty of plastic surgery on the basis of clinical assessment, and appropriately selected and conducted investigations. • Possess complete Clinical Diagnostic Skills for the recognition of plastic surgical procedures. • Able to apply sound clinical judgement and rational cost effective investigations for the diagnosis and management of Plastic surgery cases in the OPD, Wards, Emergency Room and Intensive Care unit. • Able to teach undergraduate students MBBS and Post Graduate Students MS General surgery students. • Able to perform Clinical and Investigative studies and to present in Seminars, meetings and conferences etc. • Have the ability to organise specific teaching and training programmes for para medical staff, associated professionals and patient education programmes. • Should be able to develop good communication skills and give consultations to all other departments of the hospital. • Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation. • Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behaviour in accordance with the societal norms and expectation. • Develop skills as a self-directed learner, recognise continuing educational needs: select and use appropriate learning resources. • Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers
Program specific outcomes	• Recognizes the health needs of adults and carries out professional obligations in keeping with principles of National Health Policy and professional ethics; • Has acquired the competencies pertaining to plastic surgery that

	are required to be practiced in the community and at all levels of health care system; • Has acquired skills in effectively communicating with the patients, family and the community; Is aware of the contemporary advances and developments in medical sciences. • Acquires a spirit of scientific enquiry and is oriented to principles of research methodology; and Has acquired skills in educating medical and paramedical professionals
Course outcomes	• At the end of the course the postgraduate students in Plastic surgery should have • Adequate knowledge in the subject, covering both theoretical and practical knowledge. ▪ Enable to Practice Plastic and Reconstructive Surgery efficiently and effectively backed by scientific knowledge and skill base. ▪ Show empathy and caring attitude and maintain high ethical standards. ▪ Evince keen interest in continuing surgical education; irrespective of whether working in a teaching institution or is a practicing plastic surgeon. • Be a motivated teacher – defined as Plastic Surgeon keen to share knowledge and skill with colleagues, juniors or any learner.

Course Name: M.D. ANATOMY

Program outcomes	A Student upon successfully qualifying in the M.D (Anatomy) Examinations should be able to: • Be a competent anatomist. • Teach the undergraduate students-gross anatomy, radiological anatomy, embryology, histology, neuroanatomy and elementary genetics. • Assess the students understanding of the anatomy • Assess the undergraduate programmes. 5) Plan and modify the undergraduate curriculum. • Prepare the tissues for light microscopic study. • Embalm a cadaver. • Design Gross Anatomy and Histology laboratories for teaching undergraduate and postgraduate students of anatomy. • Plan and implement research programme. • Undertake histomorphometric studies.
Program specific outcomes	• Is aware of contemporary advances and developments in the field of Anatomy. • Has acquired the competencies pertaining to the subject of Anatomy that are required to be practiced at all levels of health system. • Is able to discharge responsibilities and participate in National Health Education Programme. • Is oriented to the principles of research methodology. • Has acquired skills in educating medical and paramedical professionals.

	• Has acquired skills in effectively communicating with the students and colleagues from various medical and paramedical fields. • Has acquired skills of integrating anatomy with other disciplines as and when needed. • Has acquired qualities of a good teacher capable of innovations in teaching methodology. • Has been able to demonstrate adequate management skills to function as an effective leader of the team engaged in teaching and research
Course outcomes	• At the end of the course the student, after undergoing the training, should be able to deal effectively with the needs of the medical community and should be competent to handle all problems related to the specialty of Anatomy and recent advances in the subject. The post graduate student should also acquire skills in teaching anatomy to medical and para-medical students and be able to integrate teaching of Anatomy with other relevant subjects, while being aware of her/his limitations.

Course Name: M.D. ANESTHESIA

Program outcomes	• To enable the student to function as a specialist anesthesiologist, well trained in practice of Anesthesia, Critical Care, Pain Management, Resuscitation of all acute or acute on chronic conditions and as a trainer imparting such knowledge to the doctors in training and subordinate ancillary medical staff. • To this end he should possess diagnostic skills as well as skills with laboratory procedures, and current technologic tools, their judicious use and sensible interpretation of various clinical settings in depth knowledge of all basic sciences and all disciplines of clinical medicine. • To ensure that student develops dedication to the specialty, the patients under his care, the institution and be able to work as a team with Surgeons, Nursing staff, Hospital administration and with other Clinicians, understanding, adjusting and instructing wherever necessary with a balanced mind and leadership qualities. • To facilitate the student develop a thorough grasp of the Pharmacokinetics and Pharmacodynamics and interaction of all anesthetics and allied drugs which he will be using or which the patient has already been taking. • To ensure he develops knowledge of cardiovascular, respiratory, renal, hepatobiliary, hormonal and neurologic systems of the body • To ensure he possesses adequate knowledge of the physical principles on which are based the anesthetic monitoring and resuscitation gadgets he is likely to use, understanding the functioning of each and feasibility of their use in different clinical presentations of a patient.
Program specific outcomes	• Perform pre-anesthetic check of patients taking detailed history and a thorough Physical examination. • He should be familiar with the implications for anesthesia of common

	medical conditions. • Recognize anesthetic problems in high-risk patients and select further investigations and referral for expert opinion for dealing with specific problems. • He should be able to interpret relevant preoperative investigations. • He should be familiar with anesthetic implications of current drug therapy • Familiar with routine anesthetic equipment's and their usage, complete check for oxygen and other gases supply. • He should be able to induce, maintain anesthesia and reverse the patient efficiently. • He should be able to induce anesthesia in special circumstances like head injury, full stomach and upper airway obstruction. He should be able to deal with emergencies before, during and after anesthesia and stabilize a patient's condition. Perform the following procedures related to general anesthetic independently- Endotracheal intubation, nasal and oral under difficult situations eg. awake intubation, blind nasal intubation, and Intubation with double lumen tube. • He should perform bronchoscopy using fibre optic bronchoscope. Maintain airway by using mask ventilation. Student should be thorough with the indications, technique and management of spinal, epidural including caudal approach, Peripheral Nerve blocks. • He should be familiar with principles of management Anesthesia in special circumstances. Administer anesthesia to patients for emergency surgery, management of the-Organ Transplant surgery, Limb replantation and reconstructive surgeries Anesthesia in difficult situations. • He should be able to Assist/Perform central venous cannulation and arterial lineIntensive care medicine Students should be well versed in management of critically ill patients, monitoring and life support measures, mechanical ventilation, weaning and stabilization. Resuscitation • He should be familiar with the international guidelines for resuscitation and care of patients. A student should be able to perform BLS, ACLS and ATLS as per the protocol followed in the hospital. Detailed knowledge of the control of acute pain and chronic pain management. .
Course outcomes	• At the end of the course In a broad perspective, students should be able to demonstrate good understanding of clinical anesthesia practice, effectively manage critically ill patients including resuscitation, effectively provide emergency trauma care, and gain experience in pain management. He should have precise concepts of doing basic clinical research and application of statistical analysis, in clinical medicine, medical audit, and medical record maintenance. The students should develop an ability to discern when more senior assistance is required

Course Name: M.D. BIOCHEMISTRY

Program outcomes	• Is able to demonstrate comprehensive understanding of biochemistry as well as applied disciplines. • Has acquired the competence pertaining to basic instrumentation and procedures pertaining to biochemistry that are required to be practiced in community and at all levels of health care system. • Has acquired skills effectively in interpreting all laboratory reports. • Has the competence to perform relevant investigations which will help to diagnose important medical conditions. • Has acquired skills effectively in communicating the diagnosis to the patients and families. • Should be able to demonstrate empathy and have a human approach towards patients & respect their sensibilities. • Is oriented to principles of research methodology. • Has acquired skills in educating medical & paramedical professionals. • Is able to organize and equip Biochemistry lab
Program specific outcomes	• Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources and critically analyze relevant published literature in order to practice evidence-based biochemistry. • . Demonstrate competence in basic concepts of research methodology and epidemiology. • Practice the specialty of biochemistry in keeping with the principles of professional ethics. • Planning of investigation and knowledge of biochemical basis of diseases Ability to appraise published literature and to apply his knowledge in biochemistry • Ability to teach postgraduate, undergraduate students in biochemistry Organize clinical biochemistry section of a laboratory to deliver optimum investigative support for patient care services. • Organize and supervise the desired managerial and leadership skills. Function as a productive member of a team engaged in health care, research and education. • Perform recent investigations and procedures for patients. • Demonstrate skills in documentation of reports. • Facilitate learning of medical/nursing students, practicing physicians & paramedics as Teacher-trainee. • Play the assigned role in implementation of national health programs, effectively & responsibly. • Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education message to patients, families & communities. • .Design, fabricate & use indigenous methods/gadgets for experimental purpose.
Course	At the end of the course students should be Able

outcomes	• To demonstrate comprehensive understanding of biochemistry as well as applied disciplines. • Has acquired the competence pertaining to basic instrumentation and procedures pertaining to biochemistry that are required to be practiced in community and at all levels of health care system. • Has acquired skills effectively in interpreting all laboratory reports. Has the competence to perform relevant investigations which will help to diagnose important medical conditions. • Has acquired skills effectively in communicating the diagnosis to the patients and families. Should be able to demonstrate empathy and have a human approach towards patients & respect their sensibilities. Is oriented to principles of research methodology. Has acquired skills in educating medical & paramedical professionals. Is able to organize and equip Biochemistry Lab

Course Name: M.D. COMMUNITY MEDICINE

Program outcomes	At the end of the MD programme in Community Medicine, the student will: • Know the structure and functioning of the health system at the state, national and international levels and its historical perspectives • Know the principles of nutrition, maternal health, family welfare and put the same in to practice • Apply the principles of epidemiology and biostatistics to health practice including the design and implementation of health related research studies and clinical preventive medicine trials • Know the principles of communicable and non-communicable diseases control and assist in the implementation of national health programmes. • Identify the socio cultural dimension in health and disease and apply this knowledge in the design and implementation of an integrated health and development programme • Apply the principles of environmental and occupational health in the design of health programs aimed at improving health status • Assess specific health situations in a population, plan, organize, implement and evaluate programmes aimed at improving health situations • Identify the health needs of the special groups within populations especially the aged, the disabled & workers and to respond to their needs • Know the principles of learning and apply this knowledge in facilitating the learning process in groups of people involved in health. • Relate his/her knowledge of curative medicine to the improvement of the health status of a given population • Identify the role of the government, private and voluntary sector in health and understand the principles of innovations in health practices and research
Program specific outcomes	• Define and manage the health problems of the community. • Organize epidemiological studies to identify health problems. • Plan, implement and evaluate various health programmes especially national health, family welfare, disease control/eradication programs.

	• Select, train, supervise and manage various categories of health personnel. • Organize health care services, routine and for special groups and during periods of special needs such as disasters/calamities and epidemic. • Plan and execute a research study, including clinical trials. • Use / organize bio-statistical analysis using computers and software and prepare reports / papers. • Critically evaluate research activities • Make recommendations on policy and procedures • Plan and conduct an educational session / programme. • Assist in development of curriculum, teaching and learning activities and methods of evaluation
Course outcomes	At the end of the Postgraduate training in Community Medicine students will should be able • To nurture as Primary Care Physicians who can recognize and mange common health problems in the community. The Community-oriented Primary Care Physician will have the ability to identify, prioritize and manage the health problems of the community. He / She would be an effective leader of the health team at primary care level. The Community Physician demonstrates excellence in academics, health research, and leadership skills. He/she is instrumental in development of public health policy, design, implementation and evaluation of health programs and applies them to a broad range of community health issues.

Course Name: M.D. DERMATOLOGY

Program outcomes	At the end of the postgraduate training the student shall be able to • Recognize the importance of dermatology in the context of the health needs of the community and the national priorities in the health sector. • Practice the specialty concerned ethically and in step with the principles of primary health care. • Demonstrate sufficient understanding of the basic sciences relevant to the Dermatology, Venereology and Leprosy. • Identify social, economic, environmental, biological, and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive, and promotive measures/strategies. • Diagnose and manage majority of the conditions in dermatology, venereology and leprosy concerned on the basis of clinical assessment and appropriately selected and conducted investigations. • Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability. • Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation. • Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with societal norms and expectations. • Play the assigned role in the implementation of national health

	programmes, effectively and responsibly. • Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/ hospital or the field situation. • Develop skills as a self directed learner; recognize continuing educational needs; select and use appropriate learning resources. (xii) Demonstrate competence in the basic concepts of research methodology and epidemiology, and be able to critically analyze relevant published research literature. 6 (xiii) Develop skills in using educational methods and techniques as applicable to the teaching of medical / nursing students, general physicians and paramedical health workers. • Function as an effective leader of health team engaged in health care, research or training
Program specific outcomes	• Identify social, economic, environmental, biological and emotional determinants of patients, and institute diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care to patients; • Recognize the importance of growth and development as the foundation of Dermatology; and help each patient realize her/his optimal potential in this regard; • Plan and deliver comprehensive treatment for illness using principles of rational drug therapy; • Plan and advice measures for the prevention of infectious disease and disability; • Plan rehabilitation of patient suffering from chronic illness and handicap, and those with special needs; Manage dermatological emergencies efficiently; • Provide comprehensive care to normal, 'at risk' and sick patients. • Play the assigned role in the implementation of national health programmes, especially leprosy STD & AIDS effectively and responsibly
Course outcomes	• At the end of the course the postgraduates should be a competent specialists and / or Medical Teachers- Who shall recognize the health needs of the community and carry out professional obligations ethically and in keeping with the objectives of the national health policy. Who shall have mastered most of the competencies pertaining to the specialty, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system. Who shall be aware of the contemporary advances and developments in the discipline concerned; who shall have a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology. Who shall have acquired the basic skills in teaching of the medical and paramedical professionals

Course Name: M.D. GENERAL MEDICINE

Program outcomes	At the end of the postgraduate training in General Medicine the student shall be able to • Recognize the importance of General Medicine in the context of the health needs of the community and the national priorities in the health sector. ¬ Practice General Medicine ethically and in step with the principles of primary health care. • Demonstrate sufficient understanding of the basic sciences relevant to General Medicine. • Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive, and promotive measures/strategies. • Diagnose and manage majority of the conditions in General Medicine on the basis of clinical assessment and appropriately selected and conducted investigations. • Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability. ¬ Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation. • Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with society norms and expectations. • Play the assigned role in the implementation of National Health Programmes, effectively and responsibly. • Organise and supervise the chosen/ assigned health care services demonstrating adequate managerial skills in the clinic / hospital or the field situation. • Develop skills as a self-directed learner; recognize continuing educational needs; select and use appropriate learning resources. • Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyse relevant published research literature. • Develop skills in using educational methods and techniques as applicable to the teaching of medical / nursing students, general physicians and paramedical health workers. • Function as an effective leader of a health team engaged in health care, research or training.
Program specific outcomes	• Physicians with the necessary knowledge, skill and attitude to diagnose and manage in a cost effective manner, a wide range of clinical problems in internal medicine as seen in the community or in secondary/tertiary care setting. • Special emphasis is placed on the relatively common and treatable disorders. Possession of clinical skills required for making a diagnosis is given utmost importance. • The physician should become competent in the use of the various

	diagnostic tests, and interpret their results intelligently, keeping in mind their cost effectiveness. • Skills necessary for diagnosis, management and prevention of medical disorder. • Learnt adequate skills in communication and teaching
Course outcomes	At the end of the course that should be able to • Recognizes the health needs of the individual, community and carry out professional obligations ethically and in keeping with the objectives of the National Health Policy. • Have mastered most of the competencies pertaining to the General Medicine, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system. • Shall be aware of the recent advances and developments in General Medicine; Have acquired a spirit of scientific enquiry and is oriented to the principles of research methodology and epidemiology and Shall have acquired the basic skills in teaching of the medical and paramedical professionals.

Course Name: M.D. MICROBIOLOGY

Program outcomes	At the end of postgraduate training the students should be able to • To have knowledge about the clinical features, etiology, pathogenesis and laboratory diagnosis of communicable diseases caused by micro-organisms and apply that knowledge in the treatment, prevention and control of such diseases. • To know the principles of immune mechanism which help to understand the pathogenesis and laboratory diagnosis of infectious and non-infectious diseases. • To become a competent Microbiologist and to establish diagnostic • Microbiology laboratory in hospitals and community for patient care • To have sound knowledge of skills in microbiological laboratory methods • To acquire teaching ability and to handle classes for undergraduates • To prepare the student for fundamental and applied research Psychomotor domain: • To give guidelines for proper collection, transport and processing of clinical specimen • To have a sound knowledge of techniques of sterilization, preparation of media, disposal of biomedical waste and implementation of infection control measures • . To learn serological and immunological techniques for diagnosis of infectious diseases • To acquire competency in teaching and diagnostic work • To develop team spirit in organizing academic activities • To follow ethics in routine and research activities
Program	• To acquire knowledge and skills in various branches of Microbiology,

specific outcomes	so as to enable them to become a competent Medical Microbiologist. • To apply their training in patient care for early diagnosis of the disease • To utilize knowledge acquired for preparation of guidelines regarding infection control and implementation of infection control methods. • To plan and carry out fundamental and specialized research. • To operate routine and sophisticated instruments in the laboratory
Course outcomes	• At the end of the course, the students should be able to: 1. Establish good clinical microbiological services in a hospital and in the community in the fields of bacteriology, virology, parasitology, immunology and mycology. 2. Plan, execute and evaluate teaching assignments in medical microbiology and 3. Plan, execute, analyze and present the research work in medical microbiology

Course Name: M.D. PATHOLOGY

Program outcomes	At the end of the course the students should be able to • Diagnose routine and complex clinical problems on the basis of Histopathology (Surgical Pathology) and Cytopathology specimens, Blood and Bone Marrow examination and various tests under the domain of Laboratory Medicine (Clinical Pathology, Clinical Biochemistry/Chemical Pathology) as well as Blood Banking (Transfusion Medicine). • Interpret clinical and laboratory data with reasonable accuracy. • Able to correlate clinical and pathology data so that various clinical signs, symptoms and manifestations of disease can be correlated and explained. • Advice on the nature of appropriate specimens and the tests necessary to arrive at a diagnosis in a difficult or problematic case. • To be able to correlate clinical and laboratory findings with pathology findings at autopsy, identify discorrelations and the causes of death due to diseases (apart from purely metabolic causes). • Should be able to teach Pathology to undergraduates, postgraduates, nurses and paramedical staff including laboratory personnel. • Carry out research. • Maintain accurate records of tests and their results for reasonable periods of time so that these may be retrieved as and when necessary. • Make and record observations systematically that is of use for archival purposes and for furthering the knowledge of Pathology. • . Able to systematically write a paper and publish in a journal. • Able to present a paper in a conference through an oral presentation and poster presentation. • Should be able to identify problems in the laboratory and offer solutions there of so that a high order of quality control is maintained. • Should be capable of effectively disposing laboratory waste to ensure minimization of risk to infection and accidents to laboratory personnel.

	• Able to supervise and work with subordinates and colleagues in a laboratory. • Subject himself/herself to continuing education and constantly update his/her knowledge of recent advances in Pathology and allied subjects. • Able to perform most of the routine tests in a Pathology Laboratory including grossing of specimens, processing, cutting of paraffin sections making smears, making frozen sections and staining. • Able to collect specimens by routinely performed non-invasive out-patient procedures such as venipuncture, finger-prick, fine needle aspiration biopsy of superficial lumps and bone-marrow aspirates. It is implied that the complications of these procedures and handling of complications are apparent. Further, whenever necessary must be able to provide appropriate help to colleagues performing an invasive procedure such as a biopsy or an imaging guided biopsy. • Perform an autopsy, dissect various organ complexes and display the gross findings. • Should be familiar with the function, handling and routine care of equipment in the laboratory. • Should be able to function as a part of a team that is essential for the diagnosis and management of a patient. He/she should therefore develop an attitude of cooperation with his/her colleagues so necessary for this purpose. It is implied that he/she will whenever necessary interact with the 7 patient and the clinician or other colleagues to provide the best possible diagnosis or opinion. • Always adopt ethical principles and maintain proper etiquette in his/her dealings with patients, relatives and other health personnel. • Respect the rights of the patient including the right to information and second opinion. • Should seek and give second opinion only where necessary. • Provide leadership and inspire members of the team with whom he/she is involved with in the fields of diagnostic pathology, teaching and research. • Develop communication skills not only to improve word power for reporting and professional opinions but also to interact with patients, relatives, peers and paramedical staff
Program specific outcomes	• Has acquired the competence pertaining to basic instrumentation and procedures required for the practice of Pathology in the community and at all levels of health care system. • Has acquired skills effectively in communicating the diagnosis to the patients especially cancer patients. He should be able to demonstrate empathy and have a humane approach towards patients and their families and respect their sensibilities. • Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities. • Practice the specialty of Pathology in keeping with the principles of professional ethics. • Function as a productive member of a team engaged in health case, research and education.

Course outcomes	• At the end of the course the course the students should have the competence to diagnose important pathological conditions in various fields like histopathology, cytopathology, haematology & Immunopathology. Have acquired skills in effectively interpreting all laboratory reports. Develops skills as a self-directed learner, recognize continuing educational need, use appropriate learning resources, and critically analyze published literature in order to practice evidence-based pathology. Demonstrates competence in basic concepts of research and epidermiology. Can organize and supervise the desired managerial and leadership skills.

Course Name: M.D. PEDIATRICS

Program outcomes	At the end of the MD course in Paediatrics, the student should be able to : • Recognize the key importance of child health in the context of the health priority of the country; • Practice the specialty of Paediatrics in keeping with the principles of professional ethics; • Identify social, economic, environmental, biological and emotional determinants of child and adolescent health, and institute diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care to children; • Recognize the importance of growth, nutrition and development as the foundation of Paediatrics; and help each child realize her/his optimal potential in this regard; • Take detailed history, perform complete physical examination including neurodevelopment and behavioral assessment and anthropometric measurements of the child and make clinical diagnosis; • Perform relevant investigative and therapeutic procedures for the paediatric patient; • Interpret important imaging and laboratory results; ϖ Diagnose illness in children based on the analysis of history, physical examination and investigative work up; • Plan and deliver comprehensive treatment for illness in children using principles of rational drug therapy; • Plan and advice measures for the prevention of childhood disease and disability. • Plan rehabilitation of children suffering from chronic illness and handicap, and those with special needs; • Manage childhood emergencies efficiently; • Provide comprehensive care to normal, ‘at risk’ and sick neonates; • Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation; • Recognize the emotional and behavioral characteristics of children,

	and keep these fundamental attributes in focus while dealing with them; • Demonstrate empathy and humane approach towards patients and their families and respect cultural needs. • Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities; • Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based paediatrics; Demonstrate competence in basic concepts of research methodology and epidemiology; • Facilitate learning of medical/nursing students, practicing physicians, paramedical health workers and other providers as a teacher-trainer; • Play the assigned role in the implementation of national health programs, effectively and responsibly; • Organize and supervise the desired managerial and leadership skills; Function as a productive member of a team engaged in health care, research and education.
Program specific outcomes	To produce a competent pediatrician who: • Recognizes the health needs of neonates, infants, children and adolescents and carries out professional obligations in keeping with principles of National Health Policy and professional ethics; • Has acquired the competencies pertaining to paediatrics that are required to be practiced in the community and at all levels of health care system; ϖ Has acquired skills in effectively communicating with the child, family and the community; • Is aware of the contemporary advances and developments in medical sciences as related to child health; • Is oriented to principles of research methodology; and recent advances in Paediatrics • Has acquired skills in educating medical and paramedical professionals
Course outcomes	• At the end of the course it should be able to produce a competent pediatrician who: Recognizes the health needs of neonates, infants, children and adolescents and carries out professional obligations in keeping with principles of National Health Policy and professional ethics; Has acquired the competencies pertaining to paediatrics that are required to be practiced in the community and at all levels of health care system; Has acquired skills in effectively communicating with the child, family and the community; Is aware of the contemporary advances and developments in medical sciences as related to child health; Is oriented to principles of research methodology; and recent advances in Paediatrics .Has acquired skills in educating medical and paramedical professionals

Course Name: M.D. PHARMACOLOGY

Program outcomes	At the end of the course the student should be able to • Possess a sound knowledge of the subject in the following areas: • Basic principles of pharmacology (including molecular pharmacology) Process of new drug development. • Clinical pharmacology (including clinical pharmacokinetics, individualization of drug therapy, drug use in special categories, adverse drug reactions and drug-drug interactions, P-drug concept) • Systemic pharmacology • Principles of essential drugs and rational use of medicines Pharmacoeconomics Pharmacoepidemiology Pharmacovigilance Pharmacogenomics Research methodology (animal as well as clinical) Biostatistics Commonly used laboratory techniques, analytical methods and instrumentation Major national health problems and programmes Drug regulations in India and abroad • Teaching technology • Methods of Communication and medical writing. • Apply basic principles of pharmacology to practice rational use of existing drugs and evaluation of new drugs. • Collect and analyze experimental and clinical data related to drug kinetics and Dynamics. • Interpret the analyzed data with reasonable accuracy and derive logical conclusions. • Provide appropriate advice related to selection of drug, drug usage (desirable and undesirable effects, Kinetics, interactions), Precautions and measures to be taken during administration of drug and treating the ADRs in a given patient taking into consideration physiological, psychological & Pathological features. • Audit drug utilization and drug related adverse events • Assess emergency situations while carrying out drug trials and institute emergency management till appropriate assistance from clinical side is available. • Develop the ability for continued self learning so as to update the knowledge of recent advances in the field of Pharmacology and allied fields. • Be competent to teach and train undergraduate and future postgraduate medical students and junior doctors in Pharmacology as well as nurses and paramedical staff in Medical Colleges, Institutions and other Hospitals. • Plan and carry out both laboratory and clinical research with adherence to scientific methodology and GLP/GCP guidelines. 10) Be aware of legal and ethical aspects of drug evaluation. • Communicate the findings, results and conclusions of scientific research, both verbally and in writings. • Be aware of regulatory procedures needed to be carried out prior to the marketing of a new drug in India. • Perform common clinical procedures required for evaluation of drug in healthy volunteers and patients with competence. • Organize and manage administrative responsibilities for routine day to day work as well as new situations.

	• Carry out necessary resuscitative measures in emergency situations arising during drug evaluation. • Use teaching-learning media effectively (E.g. Computer, LCD etc. • Be able to analyze and evaluate a research paper. • Be able to formulate and conduct problem based teaching/ learning exercises. • Be capable of various managerial skills eg. Organization of workshops/training programmes etc. • Be able to constitute and conduct the proceedings of various committees e.g. IAEC, IEC etc.
Program specific outcomes	• To develop expertise in the field of Pharmacology. A process of rational thinking and cognitive action will be inculcated in an individual so that he/she shall be competent to pursue various activities as demanded by the profession as an efficient pharmacologist.
Course outcomes	• At the end of the course the students should be a competent Pharmacologist who is well versed with the basic principles of Pharmacology and is up to date with the recent advances. Acquisition of skills related to teaching, research methodology and corporate world. Knowledge of elementary statistics and its applications. Overall development of skills and personality of the PG resident. Broaden the scope of Pharmacology from bench to bed side

Course Name: M.D. PHYSIOLOGY

Program outcomes	At the end of the course the students should be • Able to teach the basic physiological mechanisms of human body with reference to their implications in the pathogenesis of diseases (pathophysiology) and their management to undergraduate medical and paramedical students. • Conduct such clinical and experimental research, as would have a significant bearing on human health and patient care. • Interact with other departments by rendering services in advanced laboratory investigations and relevant expert opinion. • Participate actively in various workshops/seminars/journal clubs/demonstration in the allied departments, to acquire various skills for collaborative research. • Contribute to society by imparting physiological understanding of health problems. • Plan a research study and conduct basic and clinical systemic investigations. The student should acquire competencies in the following tasks:

	• Hematology Experiments; Estimation of hemoglobin, Determination of Total Erythrocyte (RBC) Count and RBC Indices (Blood Standards) Determination of Total Leucocytes (WBC) Count : TLC. Preparation of a peripheral Blood Smear and Determination of Differential Leucocyte Count: DLC, Determination of Arneth Count 6. Determination of Bleeding Time (BT) and Clotting Time (CT) • Determination of Blood groups (A,B,O and Rh system) • Determination of Erythrocyte Sedimentation Rate (ESR) and Packed cell volume (PCV) Determination of Osmotic Fragility of Red Blood Cells • Determination of Platelet Count • Determination of Reticulocyte Count • Determination of Absolute Eosinophil Count • Study of Haemopoietic Cells Present in the Bone Marrow
Program specific outcomes	• Be a competent Physiologist and a role model Medical Teacher • Effectively Teach Under Graduate Medical students the basic Physiological Mechanisms in health & Disease. • Train & Conduct Experimental Research, as would have a significant clinical bearing. • Encourage interaction with allied departments to promote integrated teaching, research and advanced laboratory investigations to support publications, paper presentations and patient care. • Encourage the student to participate in student research projects of ICMR / Science & Technology, workshops, seminars, and CME programmes in the institution and outside the institution
Course outcomes	• At the end of the course the Post Graduate shall be a competent Medical Teaching in Physiology: a. Who shall be aware of the contemporary advances and developments in Physiology b. Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology. c. Who shall have acquired the basic skills in teaching the medical, dental and other paramedical professionals.

Course Name: M.D. PSYCHIATRY

Program outcomes	At the end of the postgraduate training in Psychiatry the student shall be able to • Recognize the importance of Psychiatry in the context of the health needs of the community and the national priorities in the health sector. • Practice Psychiatry ethically and in step with the principles of primary health care. • Demonstrate sufficient understanding of the basic sciences relevant to Psychiatry. • Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive, and promotive

	measures/strategies. • Function as a competent psychiatrist • a physician specialized in the diagnosis, treatment and rehabilitation of psychiatric disorders (mental, emotional and addictive disorders). • Having an understanding of the biological, psychological, social, economic and emotional aspects of psychiatric illnesses including possible preventive measures, for mental well being and contemporary advances and developments. • Prescribe psychotropic medication, physical treatments such as ECT and monitor side-effects. • Evaluate and treat psychological and interpersonal problems, including providing psychotherapy and counseling in selected cases. • Act as a consultant to primary care physicians and be an effective leader of a multidisciplinary mental health team comprising of other mental health professionals such as psychologists, social workers, psychiatric nursing professionals. • Deal with the legal aspects of psychiatric illness. Be informed of the mental health programmes, policies, mental health care infrastructure and issues in community care of mentally ill in the country. • Deal with the Psychiatric Emergencies. Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability. Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation. • Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behaviour in accordance with society norms and expectations. Organize and supervise the chosen / assigned health care services demonstrating adequate managerial skills in the clinic / hospital or the field situation. • Develop skills as a self-directed learner; recognize continuing educational needs; select and use appropriate learning resources. • Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyze relevant published research literature. • Develop skills in using educational methods and techniques as applicable to the teaching of medical / nursing students, general physicians and paramedical health workers. • Function as an effective leader of a health team engaged in health care, research or training. • Participate in the teaching and training programme of undergraduate students and interns • Training in medical audit, management, health economics, health information system, basics of statistics, exposure to human behavior studies, knowledge of pharmaco-economics and introduction to non-linear mathematics
Program specific outcomes	• To equip the trainee with basic skills in psychiatry and scientific foundations in behavioral sciences. • Has acquired the competencies pertaining to psychiatry that are

	required to be practiced in the community and at all levels of health care system; • Is aware of the contemporary advances and developments in medical sciences as related to mental health; • Is oriented to principles of research methodology; and • Has acquired skills in educating medical and paramedical professionals.
Course outcomes	• At the end of the course the Post Graduate should be a competent Psychiatrist who: Recognizes the health needs of the individual, community and carry out professional obligations ethically and in keeping with the objectives of the National Health Policy; Have mastered most of the competencies pertaining to Psychiatry, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system; Shall be aware of the recent advances and developments in Psychiatry; Have acquired a spirit of scientific enquiry and is oriented to the principles of research methodology and epidemiology and Shall have acquired the basic skills in teaching of the medical and paramedical professionals.

Course Name: M.D. RESPIRATORY MEDICINE

Program outcomes	. At the end of the postgraduate training in the discipline concerned the student shall be able to: • Recognize the importance of the Respiratory Medicine & Tuberculosis in the context of the health needs of the community and the national priorities sector • Practice the field of Respiratory Medicine & Tuberculosis ethically and in step with the principles of primary health care • Demonstrate sufficient understanding of the basic sciences relevant to the Respiratory Medicine • Obtain relevant skills required for the medical or surgical management of the patient required in Respiratory Medicine & Tuberculosis • . Obtain adequate knowledge in the subjects closely acquainted with the subjects of his post graduation in Respiratory Medicine • Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive and promotive measures/ strategies. • Diagnose and manage majority of the conditions in the field of chest medicine concerned on the basis of clinical assessment and appropriately select and conduct investigations. • Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability in the field of Respiratory Medicine. 9. Demonstrate skills in documentation of individual case details as well as morbidity and data relevant to the assigned situation.

	• Demonstrate empathy and human approach towards patients and their families and exhibit interpersonal behavior in accordance with societal norms and expectations • Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyze relevant published research literature. • Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers. • Function as an effective leader of a health team engaged in health care research or training.
Program specific outcomes	• Able to provide health care in the field of pulmonary medicine. • Able to diagnose and treat pulmonary diseases, take preventive and curative steps for these diseases in the community at all levels of health care and qualify as a consultant and teacher in the subject. Each student should obtain proficiency in the following domains during the period of training: Theoretical knowledge of different aspects of Pulmonary Medicine including the status in health and disease. • Acquire clinical skills. • Acquire practical skills. • Management of emergencies including intensive care.
Course outcomes	At the end of the course the student shall be • Abreast with the recent advances and developments in the specialty of Pulmonary Medicine. It is expected that the person will develop a spirit of enquiry and get oriented to apply recent advances and medical evidence to the practice of pulmonary medicine. • He would also grasp the fundamentals of research methodology. Medical Science is dynamic with a continuous enhancement of knowledge. The process of acquiring knowledge and skills continues even after formal education. The syllabus to be covered during post graduate training in Pulmonary Medicine given below is designed to develop a sound and scientific foundation. • It is intended to serve as a guide to impart basic knowledge and develop skills and does not impose any limits to expansion beyond the areas listed. The purpose of this document is to provide teachers and learners illustrative guidelines to achieve defined outcomes through learning and assessment.

Course Name: M.D. RADIO DIAGNOSIS

Program outcomes	At the end of the course the students should be able • To acquire thorough knowledge of principles of medicine, surgery, OG and allied Subjects. • Knowledge of basic sciences relevant to this speciality. • Update on self study, attending seminars, conference and workshops, for radio diagnosis. • Research oriented work with the aim of publishing papers in national &

	international forums. • Special emphasis will be of imaging in cancer. • In addition to acquire skills in diagnosing the diseases, to acquire life saving support services in emergency situations. • To perform interventional procedures. • Developing skills in the art of discussing the case with clinicians and to maintain cordial relationship with other departments. • Radiology principles in legal medicine and trauma care. • Professional honesty and integrity to be fostered. • Respect patient's right to information and right to seek second opinion. • To apply radiation safe techniques to the patient. • To take into account social and economic, environmental aspects while planning diagnostic procedures
Program specific outcomes	• To orient and train student in different aspects of diagnosis and intervention in radiology. • Special emphasis will be on new imaging techniques like USG, CT, MRI and interventional radiology. • Training will be oriented for technical aspects of clinical radiology and applied radiology and post treatment follow up in disease. • Ultimate goal will be to provide quality education for the post graduates and quality diagnostic and relevant therapeutic care for different sections of the society.
Course outcomes	At the end of the course the students should be able to • Independently conduct and interpret all routine and special radiological and imaging investigations. Provide radiological services in acute emergency and trauma including its medico legal aspects. Elicit indications, diagnostic features and limitation of application of ultrasonography, CT and MRI and should be able to describe proper cost-effective algorithm of various imaging techniques in a given problem setting. Perform (under supervision) basic image guided interventional procedures for diagnosis and therapeutic management. □ Formulate basic research protocols and carry out research in the field of radiology related clinical problems. Undertake further specialization in any of the above mentioned branches in Radio-diagnosis such as Gastrointestinal radiology, Uro- radiology, Neuroradiology, Vascular radiology, Musculoskeletal radiology, Interventional radiology etc. To interact with other specialists and super-specialists so that maximum benefit to the patient accrues. Work as a Senior Resident/consultant in Radiodiagnosis and conduct the teaching programme for undergraduates, postgraduates as well as paramedical and technical personnel. Organize CME in the specialty utilizing modern methods of teaching and evaluation..

Course Name: M.S. ENT

	At the end of three years of post-graduate training, the student should have:

Program outcomes	• They should obtain adequate knowledge in basic sciences like Embryology, Anatomy, Physiology, Biochemistry, Micro-biology and general surgical principles related to Oto-Rhino-Laryngology. • He/ she should have proper understanding of patho-physiology of most of the illnesses related to the specialty. • They should not fail to recognize and properly diagnose the ailments pertaining to ENT and also other common health problems of community. 5 • He/she should gain adequate skills to individually manage ENT diseases both medically and surgically as per the need. • They should manage all kinds of emergencies in Oto-Rhino-Laryngology, head and neck independently keeping in the mind the limitations existing in his place of work. • They should be able to perform common audio-vestibular tests like Pure Tone Audiometry, Impedance Audiometry, BERA, Cold Caloric Test, Positional tests, etc. • He/she should learn basic methodology in teaching medical and paramedical students in productive manner. • He/she should keep a track of current developments in the field of ENT. • They should be able to conduct research works, keep proper records and prepare reports and presentations of the same. • They should have basic knowledge about Biostatistics
Program specific outcomes	• Have Fair knowledge about the basic medical ailments related to specialty. • Practice their profession efficiently and ethically. Develop skills to maintain rapport with the patients. • Take part in National health programs and take active role in prevention and rehabilitation of ENT related diseases. • Develop basic teaching skills and be competent enough to work as a junior level teacher in educational institutes
Course outcomes	• At the end of the course a post-graduate student in Oto-Rhino-Laryngology should be able to diagnose and treat efficiently and ethically the common Ear, Nose and Throat related illness seen in community. In addition he/she should recognize and properly manage basic medical diseases and all kinds of diseases related to Ear, Nose, Throat, Head and Neck. He/she should be aware of all the recent advances and on-going studies pertaining to his/her specialty as well as the national programmes involving the specialty of E.N.T. He/ she should contribute to the community by training and implementing the preventive measures for certain diseases under his specialty. The PG student should be competent enough to teach medical and paramedical students skillfully to make them understand the subject and conduct research work.

Course Name: M.S. GENERAL SURGERY

Program outcomes	At the end of the course the students should be able to • Practice the specialty of surgery in keeping with the principles of

	professional ethics • Recognize and identify the various surgical problems • institute diagnostic, therapeutic, rehabilitative and preventive measures to provide holistic care to the patient • Take detailed history, perform full physical examination and make clinical diagnosis, perform relevant investigative and therapeutic procedures • Interpret important imaging and laboratory results • Independently perform basic surgical procedures • manage surgical trauma emergency efficiently • Demonstrate empathy and human approach towards patients and their families. Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education to patients, families and communities, • Develop skills as a self-directed learner, recognize continuing educational needs, use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based surgery, facilitate learning of medical/nursing students, practicing physicians, paramedical health workers and other health providers as a teacher/trainer • organize and supervise the desired managerial and leadership skills
Program specific outcomes	• Diagnose and appropriately manage common surgical ailments in a given situation. • Provide adequate preoperative, post-operative and follow-up care of surgical patients. • Identify situations calling for urgent or early surgical intervention and refer at the optimum time to the appropriate centers. • Counsel and guide patients and relatives regarding need, implications and problems of surgery in the individual patient. Provide and coordinate emergency resuscitative measures in acute surgical situations including trauma. • Organize and conduct relief measures in situations of mass disaster including triage. • Effectively participate in the National Health Programs especially in the Family Welfare Programs. • Discharge effectively medico-legal and ethical responsibilities and practice his specialty ethically. • Must update knowledge in recent advances and newer techniques in the management of the patients. Must learn to obtain informed consent prior to performance of operative procedure. • Perform surgical audit on a regular basis and maintain records (manual and/or electronic) for life. • Participate regularly in departmental academic activities by presenting Seminar, Case discussion, Journal Club and Topic discussion on weekly basis and maintain logbook. • Demonstrate sufficient understanding of basic sciences related to his specialty. Plan and advice measures for the prevention and rehabilitation of patients belonging to his specialty.

Course outcomes	• At the end of the course the students should be a competent surgeon who: Has acquired the competence pertaining to surgery that is required to be practiced in the community and at all levels of health care system. Has acquired the skills to manage the patients of trauma effectively. Has acquired skill in effectively communicating with patient and his attendants. Has the desired surgical skill to independently operate on elective and emergency cases. Is aware of the latest developments in the field of surgery is oriented to principles of research methodology. Has acquired skills in educating medical and paramedical professionals

Course Name: M.S. OBSTETRICS AND GYNECOLOGY

Program outcomes	At the end of the course the students should be able • To acquire thorough knowledge of Obst &Gynaecology, principles of medicine, surgery, and allied specialities. • Knowledge of basic sciences relevant to Obstetrics and Gynaecology. • Update on self study, attending seminars, conference and workshops, for Obstetrics and Gynaecology. • Research oriented work with the aim of publishing papers in national & international forums. • Plan and carry our scientific research (clinical / experimental) in specialty of Obstetrics &Gynaecology. • Be familiar with modern methods of teaching • Provide quality care to the community in the diagnosis and management of Antenatal, Intra-natal and Post-natal period of normal and abnormal pregnancies. • Provide effective and adequate care to the obstetrical and neonatal diseases. Be able to effectively manage obstetrical emergencies. • Manage common gynaecological problems and emergencies. • Develop adequate surgical skills to manage common obstetrical &Gynaecological problems. • Provide counseling and delivery of fertility regulation methods and perform medical termination of pregnancy. • Organize and implement the “National Health Programs” pertaining to Women’s Health. • Be well versed with preventive aspects in Obstetrics and Gynecology. Properly maintain medical records and know the Medico- legal aspects and laws in respect of Obstetrical &Gynaecological practice. • Keep abreast with advances in the field of Obstetrics &Gynaecology. • Involved in educational program in Obstetrics &Gynaecology (with seniors) for medical and paramedical staff and also for the society. • .Develop communication skill and demonstrate compassionate attitude
Program specific	• Provide quality care to the community in the diagnosis and management of Antenatal, Intra-natal and Post-natal period of normal and abnormal pregnancy and labor.

outcomes	• Provide effective and adequate care to a pregnant woman with complicated pregnancy. • Provide effective and adequate care to a normal and high risk neonate. • Perform obstetrical ultrasound in normal and abnormal pregnancy including Doppler. • Manage effectively all obstetrical and gynecological emergencies and if necessary make appropriate referrals. • Provide quality care to the community in the diagnosis and management of gynaecological problems including screening, and management of all gynecological cancers including during pregnancy. • Conduct a comprehensive evaluation of infertile couple and have a broad based knowledge of assisted reproductive techniques including ovulation induction, in vitro fertilization and intra-cytoplasmic sperm injection, gamete donation, surrogacy and the legal and ethical implications of these procedures. • Provide counseling and delivery of fertility regulation methods including reversible and irreversible contraception, emergency contraception etc. • Provide quality care to women having spontaneous abortion or requesting Medical Termination of Pregnancy (MTP) and manage their related complications
Course outcomes	• At the end of the course the students should be able to acquire knowledge of anatomy, physiology, pharmacology and Pathophysiology related to reproductive system. To be able to clinically diagnose the diseases related to reproductive system and to do appropriate investigations and manage them by medical, surgical and other relevant modalities. To acquire thorough knowledge of physiology of normal pregnancy and its diagnosis and Management. Management of abnormal pregnancy. Basics in neonatal care.

Course Name: M.S. OPHTHALMOLOGY

Program outcomes	• The student should possess basic knowledge of the structure, function and development of the human body as related to ophthalmology, of the factors which may disturb these mechanisms and the disorders of structure and function which may result thereafter. • The student should be able to practice and handle most day-to-day problems independently in ophthalmology. The student should recognize the limitations of his/her own clinical knowledge and know when to seek further help. • The student should understand the effects of environment on health and be familiar with the epidemiology of at least the more common diseases in the field of ophthalmology.

	• The student should be able to integrate the preventive methods with the curative and rehabilitative measures in the comprehensive management of the disease. • The student should be familiar with common eye problems occurring in rural areas and be able to deal with them effectively. • The student should also be made aware of Mobile Ophthalmic Unit and its working and components. • The student should be familiar with the current developments in Ophthalmic Sciences. • The student should be able to plan educational programmes in Ophthalmology in association with senior colleagues and be familiar with the modern methods of teaching and evaluation. • The student should be able to identify a problem for research, plan a rational approach to its solution, execute it and critically evaluate his/her data in the light of existing knowledge. • The student should reach the conclusions by logical deduction and should be able to assess evidence both as to its reliability and its relevance. • The student should have basic knowledge of medico-legal aspects of medicine. The student should be familiar with patient counseling and proper consent taking.
Program specific outcomes	• Offer to the community, the current quality of 'standard of care' in ophthalmic diagnosis as well as therapeutics, medical or surgical, in most of the common situations encountered at the level of health services. • Periodically self assess his or her performance and keep abreast with ongoing advances in the field and apply the same in his/her practice. • Be aware of her/his own limitations to the application of the specialty in situations, which warrant referral to more qualified centers or individuals. • Apply research and epidemiological methods during his/her practice. The post graduate student should be able to present or publish work done by him/her. • Contribute as an individual/group towards the fulfillment of national objectives with regard to prevention of blindness. • Effectively communicate with patients or relatives so as to educate them sufficiently and give them the full benefit of informed consent to treatment and ensure compliance.
Course outcomes	• A postgraduate student in ophthalmic surgery at the end of 3 yr course should develop proper clinical skills and make diagnosis and correlate with the symptoms and from the history taken and also be capable to diagnose diseases in his/her specialty and manage them as effectively as possible and take decisions for the patients best interest including referral to a senior consultant if there is any difficultly Teaching ability The student should be able to teach MBBS students about the common ophthalmic diseases basic pathophysiologic aspect and general and basic managements Research ability The student must acquire knowledge about research methodology including record maintaining

	and to conduct proper research enquiry with proper analysis and writing reports Team work The student should be able to work as a team with good communication ability with the patients relatives particularly in emergency situations the student should also be able to maintain human values with ethical consent

Course Name: M.S. ORTHOPAEDICS

Program outcomes	A student upon successfully qualifying in the M.S. (Orthopaedics) examinations should • Identify the diseases and injuries of musculo-skeletal system and obtain proper history and perform thorough clinical examination. • Plan and interpret investigations and institute management of diseases and injuries of musculo-skeletal system. • Acquire scientific temper for teaching and research in the discipline of orthopedics. • Acquire skills to manage orthopedic services. • Organize rehabilitative services to the physically handicapped persons
Program specific outcomes	• Assist in the surgical management of polytrauma patient • Assist in Arthroplasty surgeries of hip, knee, shoulder and the ankle • Assist in spinal decompressions and spinal stabilizations • Assist in operative arthroscopy of various joints • Assist /perform arthrodesis of major joints like hip, knee, shoulder, elbow • Assist in corrective osteotomes around the hip, pelvis, knee, elbow, finger and toes • Assist in surgical operations on benign and malignant musculoskeletal tumour including radical excision and custom prosthesis replacement. • Assist in open reduction and internal fixations of complex fractures of acetabular, pelvis, IPSI lateral floating knee/elbow injuries, shoulder girdle and hand • Assist in spinal deformity corrections • Independently perform closed/open reduction and internal fixation with DCP, LCP, intramedullary nailing, LRS • Assist in limb lengthening procedures • Assist in Revision surgeries • Provide pre and post OP care • Perform all clinical skills as related to the speciality.
Course outcomes	• At the end of the course the students should be aware of the current concepts in quality care in Orthopaedics and musculoskeletal trauma and also of diagnosis, therapeutic, medical and surgical management of orthopaedic problems. Able to offer initial primary management of acute orthopaedic and trauma emergencies. Aware of the limitations and refer readily to major centres for more qualified care of cases which warrant such referral. Aware of research methodology and be able to conduct research and publish the work done. Able to effectively

	communicate with patients, their family members, people and professional colleagues. Able to exercise empathy and a caring attitude and maintain high ethical standards. Able to continue taking keen interest in continuing education irrespective of whether he / she is in teaching institution or in clinical practice. Dynamic, available at all times and proactive in the management of trauma victims and orthopaedic emergencies

UNDERGRADUATE COURSES

MBBS: ANATOMY

Program outcomes	At the end of the course the student shall be able to: (a) Comprehend the normal disposition, clinically relevant interrelationships, functional and cross sectional anatomy of the various structures in the body; (b) Identify the microscopic structure and correlate elementary ultra structure of various organs and tissues and correlate the structure with the functions as a prerequisite for understanding the altered state in various disease processes; (c) Comprehend the basic structure and connections of the central nervous system to analyze the integrative and regulative functions of the organs and systems. He/She shall be able to locate the site of gross lesions according to the deficits encountered. (d) Demonstrate knowledge of the basic principles and sequential development of the organs and systems; recognize the clinical stages of development and the effects of common teratogens. He/She shall be able to explain the developmental basis of the major variations and abnormalities.

	(e)Identify and locate all the structures of the body and mark the topography of the living anatomy. Identify the organs and tissues under the microscope; Understand the principles of karyotyping and identify the gross congenital anomalies; Understand the principles of newer imaging techniques like Ultra sound, Computerised Tomography Scan, Interpretation of plain and contrast X – rays. Understand clinical basis of some common clinical procedures i.e.intramuscular and intravenous injection, lumbar puncture, kidney biopsy etc
Program specific outcomes	• Identify and locate all the structures of the body and mark the topography of the living anatomy. • Identify the organs and tissues under the microscope; • Understand the principles of karyotyping and identify the gross congenital anomalies. • Understand the principles of newer imaging techniques like Ultra sound, Computerised Tomography Scan, Interpretation of plain and contrast X – rays. • Understand clinical basis of some common clinical procedures i.e.intramuscular and intravenous injection, lumbar puncture, kidney biopsy etc.
Course outcomes	• At the end of the course the student should have a comprehensive knowledge of the gross and microscopic structure and development of human body to provide a basis for understanding the clinical correlation of organs of structures involved and the anatomical basis for the disease presentations.

MBBS: PHYSIOLOGY

Program outcomes	At the end of the course the student will able to: • Explain the normal functioning of all the organ systems and their interactions for well-coordinated total body function • Assess the relative contribution of each organ system to the maintenance of the milieu interior. • Elucidate the physiological aspects of normal growth and development. • Describe the physiological response and adaptations to environmental stresses. • List the physiological principles underlying pathogenesis and treatment of disease. • Perform experiments designed either primarily for the study of

	physiological phenomena or for assessment of function. • Analyze and interpret experimental/investigative data critically. • Distinguish between normal and abnormal data derived as a result of tests which he/she has performed and observed in the laboratory
Program specific outcomes	• Conduct experiments designed for study of physiological phenomena: • Interpret experimental / investigative data; • Distinguish between normal and abnormal data derived as a result of tests which he/she has performed and observed in the laboratory.
Course outcomes	• The broad goals of the teaching of undergraduate student in knowledge of the normal functions of the organ systems of the body facilitate an understanding of the physiology basic of health of disease.

MBBS: BIOCHEMISTRY

Program outcomes	At the end of the course, the student shall be able to: • Describe the molecular and functional organization of a cell and list its sub cellular components. • Delineate structure, function and inter-relationships of bimolecular and consequences of deviation from normal. • Summarize the fundamental aspects of enzymologist and clinical application wherein regulation of enzymatic activity is altered. • Describe digestion and assimilation of nutrients and consequences of malnutrition. • Integrate the various aspects of metabolism and their regulatory pathways. • Explain the biochemical basis of inherited disorders with their associated squeal. • Describe mechanisms involved in maintenance of body fluid • Outline the molecular mechanisms of gene expression and regulation, the principles of genetic engineering and their application in medicine. • Summarize the molecular concept of body defenses and their application in medicine • Outline the biochemical basis of environmental health hazards, biochemical basis of cancer and carcinogenesis. • Familiarize with the principles of various conventional and specialized laboratory investigations and instrumentation analysis and interpretation of a given data. • Suggest experiments to support theoretical concepts and clinical diagnosis.
Program specific	

outcomes	• Make use of conventional techniques / instruments to perform biochemical analysis relevant to clinical screening and diagnosis. • Analyze and interpret investigative data. • Demonstrate the skills of solving scientific and clinical problems and decision making.
Course outcomes	• At the end of the course the of undergraduate students in biochemistry understands the scientific basis of the life processes at the molecular level and to orient them towards the application of the knowledge acquired in solving clinical problems.

MBBS: PATHOLOGY

Program outcomes	• At the end of the course, the student should be able to :- • Describe the structure and ultrastructure of a sick cell, mechanisms of cell degeneration, cell death and repair and be able to correlate structural and functional alterations. • Explain the pathophysiological processes which govern the maintenance of homeostasis, mechanisms of their disturbance and the morphological and clinical manifestations associated with it. • Describe the mechanisms and patterns to tissue response to injury such that she/he can appreciate the pathophysiology of disease processes and their clinical manifestations. • Correlate normal and altered morphology (gross and microscopic) of different organ systems in common diseases to the extent needed for understanding of disease processes and their clinical significance • Describe the rationale and principles of technical procedures of the diagnostic laboratory tests and interpretation of the results; • Perform the simple bed-side tests on blood, urine and other biological fluid samples; • Draw a rational scheme of investigations aimed at diagnosing and managing the cases of common disorders; • Understand biochemical/physiological disturbances that occur as a result of disease in collaboration with pre clinical departments.
Program specific outcomes	• Understand the concepts of cell injury and changes produced thereby in different tissues and organs and the body's capacity for healing. • Understand the normal homeostatic mechanisms, the derangements of these mechanism and the effects on human systems. • Understand the etiopathogenesis, the pathological effects and the clinico-pathological correlation of common infectious and non-infectious diseases. • Understand the concept of neoplasia with reference to the etiology, gross and microscopic features, diagnosis and prognosis in different tissues and organs of the body. • Correlate normal and altered morphology (gross and microscopic) of

	different organ systems in different diseases to the extent needed for understanding of disease processes and their clinical significance. • Have a knowledge of common immunological disorders and their resultant effects on the human body. • Have an understanding of the common haematological disorders and the investigations necessary to diagnose them and determine their prognosis. • Perform and interpret in a proper manner the basic clinico-pathological procedures. • Know the principles of collection, handling and dispatch of clinical samples from patients in a proper manner.
Course outcomes	• At the end of the course the undergraduate student in Pathology should have a comprehensive knowledge of the mechanisms and causes of disease, in order to enable him/her to achieve complete understanding of the natural history and clinical manifestations of disease.

MBBS : PHARMACOLOGY

Program outcomes	• At the end of the course, the students shall be able to know • The general principles of actions and effects of various drugs and their kinetics. • Dose related effects of drugs. • Indications, contraindications, interactions and adverse effects of therapeutically used drugs. • The concept of essential drugs, the essential drug list of our country. • The importance of rational drug therapy. • To prescribe rationally based on the efficacy, safety and cost effectiveness for a particular disease depending on both individual and community needs. • To prescribe drugs in special situations such as pregnancy, lactation, infancy and old age. • To prescribe for mass therapy under National health programmes. • The drugs of addiction and the management of addiction. • Antidotes and drugs used in common poisoning. • The various environmental and occupational pollutants, their effects on human health and the management. • The different types of biomedical waste, their potential risks and the management of health hazards caused by them. • The ethics and modalities in the development of new drugs and the ethics in clinical practice and animal ethics. 80 Skills: At the end of the course the student shall be able to prescribe drugs for common ailments. • Recognize the side effects, adverse reactions and interactions of commonly used drugs. • Instruct patients how to use various drug delivery systems such as inhalers, nebulizers etc.

	• Calculate the dose of drugs according to age, body surface area, weight and associated diseases such as heart failure, renal and hepatic impairment. Determine the rate of infusion of vital drugs such as dopamine, dobutamine, oxytocin and intravenous fluids. • Critically evaluate the information on common pharmaceutical preparation (drug formulations).
Program specific outcomes	• Understand pharmacokinetic and pharmacodynamic principles involved in the use of drugs • Understand and identify the various factors that can affect the action of drugs • Know the various routes of drug administration with advantages and disadvantages of the various routes • Undertake dosage calculations as appropriate for the patient and be able to select the proper drug and dose for the at risk population i.e. patients with kidney or liver disease, elderly, pregnant and lactating females, and children. • Understand the importance of rational prescribing of drugs and the concept of essential drugs 6. To be able to identify and monitor adverse drug reactions (ADRs) and appreciate the importance of ADR reporting • Understand the methods in experimental pharmacology, principles of bioassay and be able to correlate drug effects with the action of drugs at the receptors. • Have knowledge of common drugs and doses used for different ailments • Have an understanding of basic mechanism by which a drug acts • Should be able to select rationally from the available drugs
Course outcomes	• at the end of the course the undergraduate students in Pharmacology should have holistic knowledge of Pharmacology and inculcate a rational and scientific basis of therapeutics

MBBS : MICROBIOLOGY

Program outcomes	• At the end of the course the student will be able to: • State the infective micro-organisms of the human body and describe the host - parasite relationship. • List the pathogenic microorganisms (Bacteria, Viruses, Parasites, Fungi) and describe the pathogenesis of the diseases produced by them. • State or indicate the modes of transmission of pathogenic and opportunistic organisms and their sources including insect vectors responsible for transmission of infection. • Describe the mechanisms of immunity to infections. • Acquire knowledge on suitable antimicrobial agents for treatment of infections and scope of immuno therapy and different vaccines available for prevention of communicable diseases.

	• Apply methods of disinfection and sterilization to control and prevent hospital and community acquired infections. • Recommend laboratory investigations regarding bacteriological examination of food, water, milk, and air • At the end of the course the student will be able to: o Operate and use the light compound microscope. • To employ aseptic and sterile precautions while performing simple invasive procedures such as venipuncture etc. • Collect and transport appropriate clinical materials with necessary precautions for the laboratory diagnosis of infectious diseases. • To perform common laboratory techniques (as given below) for the direct demonstration of micro-organisms from clinical materials and interpret their findings. • Wet preparation for Trichomonas vaginalis. • KOH preparation for the identification of fungal elements. • Saline and iodine preparations and concentration methods for parasites and demonstration of trophozoites, ova or cysts in stool samples. • Prepare and stain peripheral blood for screening malarial parasites and microfilariae. • Prepare a smear and perform Gram stain on body fluids, urine and pus specimens. • Prepare a smear and perform Ziehl – Nielsen stain for demonstration of Mycobacteria especially from sputum. • Perform and interpret cold staining techniques on skin smear for demonstration of M. leprae. • Interpret results of microbiological tests including antimicrobial testing for the diagnosis of common infectious diseases. • To perform and interpret a skin test. • Perform simple standard rapid tests for diagnosis of infectious diseases. • To organize the safe handling and disposal of infectious waste.
Program specific outcomes	• Understanding of role of microbial agents in health and disease, • Understanding of the immunological mechanisms in health and disease, • Ability to correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents, • Knowledge of the principles and the application of infection control measures, • An understanding of the basis of choice of laboratory diagnostic tests and their interpretation, antimicrobial therapy, control and prevention of infectious diseases
Course outcomes	• At the end of the course the undergraduate students in Microbiology should have an understanding of the natural history of infectious disease in order to deal with the etiology, pathogenesis, laboratory diagnosis, treatment and control of infections in the community.

MBBS: FORENSIC MEDICINE

Program outcomes	At the end of the course the student will be able to • Appear in a Court of law as a Registered Medical Practitioner and give evidence in cases of homicide, assault, sexual offences, alcoholic intoxication, drug dependence and other cases requiring medical opinion. • Practice medicine in the society following medical ethics and etiquette as prescribed by the Medical Council of India. • To conduct autopsy on medico-legal cases and issue postmortem certificates; to examine cases of wounds (assault, homicide etc.,) at the hospital and issue required medico-legal certificates (wound certificates). • To treat cases of poisoning and issue certificates to the court and the police.
Program specific outcomes	• Identify the basic medicolegal aspects of hospital and general practice. • .Define the medicolegal responsibilities of a general physician while rendering community service either in a rural primary health centre or an urban health centre. • Appreciate the physician's responsibilities in criminal matters and respect for the codes of medical ethics. • Diagnose, manage and identify also legal aspects of common acute and chronic poisonings. • Describe the medicolegal aspects and findings of post-mortem examination in case of death due to common unnatural conditions & poisonings. • Detect occupational and environmental poisoning, prevention and epidemiology of common poisoning and their legal aspects particularly pertaining to Workmen's Compensation Act. • Describe the general principles of analytical toxicology. • Make observations and logical inferences in order to initiate enquiries in criminal matters and medicolegal problems. • Diagnose and treat common emergencies in poisoning and manage chronic toxicity. • Make observations and interpret findings at postmortem examination. • observe the principles of medical ethics in the practise of his profession
Course outcomes	• At the end of the course the undergraduate students should have the knowledge of legal procedures involved in medical practice and to apply the knowledge of medical science for the purpose of ensuring justice in courts of law. Further the teaching will help the students to know of medical ethics and etiquette to be followed during the practice of medicine. As it is a well known fact that the medical service become vulnerable to be criticized day to day by the litigatory society, a medical student should be prepared to practice medicine without being entangled either by professional, criminal or consumer law. Hence the knowledge in forensic medicine is most essential and useful and it can

	be gained only during their studentship.

MBBS: COMMUNITY MEDICINE

Program outcomes	At the end of the course, the learner shall be: • Aware of the physical, social, psychological, economic, and environmental health determinants of health and disease • Able to think epidemiologically, diagnose totally, treat comprehensively and be able to function as community and first contact physician • Able to apply the clinical skills to recognize and manage common health problems including their physical, emotional and social aspects at the individual, family and community levels and deal with public health emergencies • Able to identify, prioritize and manage the health problems of the community after making community diagnosis • Able to perform as an effective leader of health team at primary care level
Program specific outcomes	• describe the health care delivery system including rehabilitation of the disabled in the country; • Describe the National Health Programmes with particular emphasis on maternal and child health programmes, family welfare planning and population control. • List epidemiological methods and describe their application to communicable and non-communicable diseases in the community or hospital situation. • apply bio statistical methods and techniques; • Outline the demographic pattern of the country and appreciate the roles of the individual, family, community and socio-cultural milieu in health and disease. • Describe the health information systems. • Enunciate the principles and components of primary health care and the national health policies to achieve the goal of 'Health for All'. • Identify the environmental and occupational hazards and their control. Describe the importance of water and sanitation in human health. • to understand the principles of health economics, health administration, health education in relation to community. • Use epidemiology as a scientific tool to make rational decisions relevant to community and individual patient intervention. • Collect, analyze, interpret and present simple community and hospital based data. • Diagnose and manage common health problems and emergencies at the individual, family and community levels keeping in mind the existing health care resources and in the context of the prevailing socio-cultural beliefs. • Diagnose and manage maternal and child health problems and advise a

	couple and the community on the family planning methods available in the context of the national priorities. • Diagnose and manage common nutritional problems at the individual and community level. • Plan, implement and evaluate a health education programme with the skill to use simple audio-visual aids. • Interact with other members of the health care team and participate in the organisation of health care services and implementations of national health programmes.
Course outcomes	• At the end of the course the students should be able to Understand physical, social, psychological, economic and environmental determinants of health and disease, Ability to recognize and manage common health problems including physical, emotional and social aspects at individual family and community level in the context of National Health Programmes, Ability to Implement and monitor National health programmes in the primary care setting. Knowledge of maternal and child wellness as they apply to national health care priorities and programmes, Ability to recognize, investigate, report, plan and manage community health problems and emergencies.

MBBS: OPHTHALMOLOGY

Program outcomes	At the end of training in the subject of ophthalmology the student shall be able to : • Identify the abnormal conditions of the eye. • Diagnose various eye diseases which are most prevalent in the country. Manage various eye conditions like conjunctivitis, stye, Chalazion and foreign body. • Recognize and give medical treatment of anterior segment disease. • Identify the national objectives and be an active participant in the national programme for prevention and control blindness. • Recognize the ophthalmic manifestations of systemic diseases. • Determine visual acuity. • Determine field of vision. • Test colour vision. • Take Conjunctival swab. • Use of Ophthalmoscope. • Examine anterior segment of eye. • Remove extraocular foreign body.
Program specific outcomes	• Should have knowledge of common problems affecting the eye: • Principles of management of major ophthalmic emergencies • Knowledge on main systemic diseases affecting the eye • Effects of local and systemic diseases on patient's vision and the necessary action required to minimize the sequalae of such diseases; • Adverse drug reactions with special reference to ophthalmic manifestations; magnitude of blindness in India and its main causes; • National programme of control of blindness and its implementation at

	various levels eye care education for prevention of eye problems role of primary health centre in organization of eye camps • Organization of primary health care and the functioning of the ophthalmic assistant • Integration of the national programme for control of blindness with the other national health programmes;eye bank organization licit a history pertinent to general health and ocular status; • Assist to organise primary eye care service through primary health centres; • Use effective means of communication with the public and individual to motivate for surgery in cataract and for eye donation;
Course outcomes	• At the end of the course the students in ophthalmology should have knowledge and skills to practice as a clinical and as a primary eye care physician and also to function effectively as a community health leader to assist in the implementation of National Programme for the prevention of blindness and rehabilitation of the visually impaired.

MBBS: OTO-RHINO-LARYNGOLOGY

Program outcomes	At the end of the course, the student will be able to: • Diagnose and manage the common ENT diseases and emergencies. • Adopt the rational use of commonly used drugs, keeping in mind their adverse reactions. • Suggest common investigative procedures and interpret their results. • Advice treatment for the hearing handicapped person and deaf. • Prevent the infective diseases like CSOM and Rhinosporodiosis. • Be able to use auroscope, nasal speculum, tongue depressor, tuning fork and head mirror otoscope. • Conduct CPR (Cardiopulmonary resuscitation) and first aid in newborns, children and adults including endotracheal intubation. • Maintain airway (endotracheal intubation / tracheostomy/cricothyroidostomy). Cricothyroidectomy. • Perform syringing of ear. • Do nasal packing for epistaxis. • Perform removal of foreign bodies in ENT
Program specific outcomes	• Describe the basic pathophysiology of common ENT diseases and emergencies. • Adopt the rational use of commonly used drugs, keeping in mind their adverse reactions. • Suggest common investigative procedures and their interpretation • Examine and diagnose common ENT problems including the pre-malignant and malignant disorders of the head and neck. • Manage ENT problems at the first level of care and be able to refer whenever necessary.

Course outcomes	• At the end of the course undergraduate students in Oto –rhino-laryngology should have acquired adequate knowledge and skills for optimally dealing with common disorders and emergencies and principles of rehabilitation of the impaired hearing.

MBBS : GENERAL MEDICINE

Program outcomes	At the end of clinical posting, an undergraduate should have the following knowledge / skill. He /she should be able to perform the following • Be able to evaluate each patient as a person in society and not merely as a collection of organ systems. • Have developed an interest in cure for all types of patients. Recognize differences between normal and abnormal behavior. • Be able to discern the hopes and fears of patients which inevitably underlie the symptom complexes and know how to handle these emotions, both in the patient and in others. Possess sound knowledge of common diseases, their clinical manifestation and natural history. • Elicit a good clinical history and physical findings, elucidate the clinical problems based on these and discuss the differential diagnosis. Requisition of relevant laboratory tests and perform common side lab procedures. • Be familiar with common imaging techniques, their advantages, disadvantages and indications; be aware of radiation hazards and measures to protect there from. • Outline the principles of management of various diseases, including the medical and surgical procedures available. • Describe the mode of action of commonly used drugs, their doses, side effects, toxicity, indications, contraindication and drug interactions. • Have an open attitude to the newer developments in medicine to keep abreast of new knowledge. 232 Diagnosis and provide competent initial care to medical emergencies. Refer medical problems to secondary and tertiary care at appropriate times. Recognize the problems arising in patients of AIDS. Have an understanding of the art of medicine involving communication with patients, demonstration of empathy, reassurance, patient education and an understanding of the patient's socio-economic circumstances in relation to management. Learn to be adaptable to new ideas and new situations where resources may be limited. Possess knowledge of and perform certain procedures. Understand the ethical and legal implications of one‟s medical diseases. • Obtain a proper relevant history and perform a humane and thorough clinical examination including internal examinations (per – rectal and per vaginal) and examinations of all organs / systems in adults. • Arrive at a logical working diagnosis after clinical examination. Plan and institute a line of treatment which is need based, cost effective and appropriate for common ailments taking into consideration Patient

	Disease Socio-economic status • Assess and manage fluid / electrolyte and acid – base imbalance. • Interpret abnormal biochemical laboratory values of common diseases. • Interpret serological tests such as VDRL, ASLO, Widal, HIV, Rheumatoid factor, Hepatitis and TORCH infections. • Write a complete case record with all necessary details. 8. Write a proper discharge summary with all relevant information. • Write a proper referral note to secondary or tertiary centers or to other physicians with all necessary details. Assess the need for and issue proper medical certificates patients for various purposes. . • Adopt universal precautions for self protection against HIV and hepatitis and counsel patients. • Record and interpret an ECG and be able to identify common abnormalities like myocardial infarction and arrhythmias. • Start i.v. line and infusion. Give intradermal / SC / IM / IV injections, Pass a nasogastric tube. Pass a stomach tube and do stomach wash Administer enemas. • Do Pleural / peritoneal tap Aspirate liver abscess Administer O2 by mask, catheter and O2 tent and be able to handle O2 cylinder. Manage acute anaphylactic shock • Manage diarrhoeas / dysenteries; Assess dehydration; prepare and Administer oral dehydration therapy (ORT). Manage emergencies of drowning Manage common poisoning. Manage acute pulmonary edema and left ventricular failure. Manage acute severe bronchial asthma. Manage hyperpyrexia
Program specific outcomes	• Diagnose common clinical disorders with special reference to infectious diseases, nutritional disorders, tropical and environmental diseases. • Outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contra-indications. • Propose diagnostic and investigative procedures and ability to interpret them. • Provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required. • Recognize geriatric disorders and their management. • Develop clinical skills (history taking, clinical examination and other instruments of examination) to diagnose various common medical disorders and emergencies. • Refer a patient to secondary and/or tertiary level of health care after having instituted primary care. • Perform simple routine investigations like haemogram, stool, urine, sputum and biological fluid examinations. assist the common bedside investigative procedures like pleural tap, lumbar puncture, bone marrow aspiration/biopsy and liver biopsy.
Course outcomes	• At the end of the course the students should be able to Demonstrate understanding of the patho-physiologic basis, epidemiological profile,

	signs and symptoms, of disease and their investigation and management, Competently interview and examine an adult patient and make a clinical diagnosis, Appropriately order and interpret laboratory tests, Initiate appropriate cost-effective treatment based on anunderstanding of the rational drug prescriptions, medical interventions required and preventive measures, Follow up patients with medical problems and refer whenever required, Communicate effectively, educate and counsel the patient and family, Manage common medical emergencies and refer when required, Independently perform common medical procedures safely and understand patient safety issues,

MBBS: GENERAL SURGERY

Program outcomes	At the end of training the undergraduate student should be able to: • Diagnose and appropriately treat common surgical ailments: • Identify situation calling for urgent or early surgical intervention and refer at the optimum time to the appropriate centres; • Requisition and interpret basic relevant investigations; • Provide adequate pre and post – operative and follow – up care of surgical patients; • Counsel and guide patients and relatives regarding need, implications and problems of surgery in the individual patient; • Develop adequate and right attitude in dealing with surgical problems of patients. Provide emergency resuscitative measures in acute surgical situations including trauma. • Organise and conduct relief measures in situations of mass casualties. Effectively participate in the National Health Programmes especially the Family Welfare Programme. • Discharge effectively medico-legal and ethical responsibilities. Perform simple routine surgical procedures • Obtain a proper relevant history and perform a humane and through clinical examination including internal examinations (per-rectal and per – vaginal) • And examinations of all organs/ systems in adults and children. • Arrive at a logical working diagnosis after clinical examination. • Order appropriate investigations keeping in mind their relevance (need based) and cost effectiveness. • Plan and institute a line of treatment which is need based, cost effective and appropriate for common ailments taking into consideration: a) Patient; b) Disease; c) Socio – economic status; d) Institutional/governmental guidelines. Recognize situations which call for urgent or early treatment at secondary and tertiary centres and

	make a prompt referral of such patients after 260 giving firstaid or emergency treatment. • Demonstrate empathy and humane approach towards patients, relatives and attendants. • Develop a proper attitude towards patients, colleagues and other staff. Demonstrate interpersonal and communication skills befitting a surgeon in order to discuss the illness and its outcome with patient and family. Establish rapport and talk to patients, relatives and community regarding all aspects of medical care and disease. • Write a complete case record with all necessary details. • Write a proper discharge summary with all relevant information. • Write a proper referral note to secondary or tertiary centres or to other surgeons with all necessary details. • Assess the need for an issue proper medical certificate to patients for various purposes. • Maintain an ethical behavior in all aspects of medical practice. • Appreciate patients right to privacy. • Obtain informed consent for any examination/procedure. . Be able to do surface marking of common superficial arteries, veins, nerves and viscera. • Access and manage fluid/ electrolyte and acid base imbalance. • Adopt universal precautions for self protection against HIV and hepatitis and counsel patients. • Start i.v.line and infusion in adults, children and neonates. Do venous cutdown. • Give intradermal / SC/ IM/IV injection. • Insert and manage a C.V.P line. • Conduct CPR (Cardiopulmonary resuscitation) and first aid in newborns, children and adults including endotracheal intubation. • . Pass a nasogastric tube. • Pass a stomach tube and do stomach wash. 29. Perform vasectomy. 30. Perform circumcision. • Perform reduction of paraphimosis. • Do Proctoscopy. • Do injection and banding of piles Incise and drain superficial Abscesses; do dressing. • Manage superficial wounds and do suturing of superficial wounds & wound toilet. • Remove small cutaneous/ subcutaneous swelling. Control external haemorrhage. • Catheterize bladder in both males and females. • . Perform nerve blocks like infiltration, digital, pudendal, paracervical and field block. • Relieve tension pneumothorax by inserting a needle. Insert flatus tube. • Provide first aid to patients with peripheral vascular failure and shock. • Assess degree of burns and administer emergency management
Program	

specific outcomes	• Describe etiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies, in adults and children. • Define indications and methods for fluid and electrolyte replacement therapy including blood transfusion. • Define asepsis, disinfection and sterilization and recommended judicious use of antibiotics. • Describe common malignancies in the country and their management including prevention. • Enumerate different types of anaesthetic agents, their indications, mode of administration, contraindications and side effects. • Diagnose common surgical conditions both acute and chronic, in adult and children. • Plan various laboratory tests for surgical conditions and interpret the results. Identify and manage patients of hemorrhagic, septicaemic and other types of shock. • Be able to maintain patent air-way and resuscitate i) a critically injured patient ii) ii) patient with cardio-respiratory failure iii) iii) a drowning case. Monitor patients of head, chest, spinal and abdominal injuries, both in adults and children. Provide primary care for a patient of burns. • Acquire principles of operative surgery, including pre-operative, operative and post operative care and monitoring. • Treat open wounds including preventive measures against tetanus and gas gangrene. • Diagnose neonatal and pediatric surgical emergencies and provide sound primary care before referring the patient to secondary/tertiary centres. • Identify congenital anomalies and refer them for appropriate management.
Course outcomes	• at the end of the course the student should have an understanding in the structural and functional basis, principles of diagnosis and management of common surgical problems in adults and children, Ability to choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and blood products based on the clinical condition, Ability to apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in surgical practice, Knowledge of common malignancies in India and their prevention, early detection and therapy, Ability to perform common diagnostic and surgical procedures at the primary care level, Ability to recognize, resuscitate, stabilize and provide advanced life support to patients following trauma, Ability to administer informed consent and counsel patient prior to surgical procedures, Commitment to advancement of quality and patient safety in surgical practice.

MBBS: OBSTETRICS & GYNAECOLOGY

Program outcomes	At the end of training, the undergraduate student should be able to: • Appreciate the socio-cultural, economic and demographic factors that influence the practice of Obstetrics and Gynaecology. Appreciate the principles of reproductive anatomy and physiology. • Understand the preconception, antenatal, intra natal and post-natal factors including drugs that affect the mother and foetus. • Recognise the changes and adaptation that occur in the mother during pregnancy, labour and puerperium. • Impart antenatal care, detect deviations from normal pregnancy and refer risk cases appropriately. • Manage normal labour, recognize the factors that may lead to complications and refer such cases appropriately. • Institute primary treatment in Obstetrics and Gynaecological emergencies. Resuscitate and take adequate and care of the newborn. • Assist couples with infertility and those requiring contraception. Know the aetiopathology and management of menstrual abnormalities. • Know about the benign and malignant tumours of the genital tract and appreciate the need for screening and prevention. • Recognize the importance of infections and other diseases of the genital tract and appreciate the need for screening and prevention • Recognizes the importance of infections and other diseases of the genital tract and give appropriate treatment. • Know about the displacements of genital tract and injuries. • Understand the implications of medico legal and ethical issues concerning the specialty. • Acquire communication, decision making and managerial skills. • Acquire skills to perform Obstetrical and Gynaecological Examination and certain minor investigations and therapeutic co operative procedures • Obtain proper relevant history and thorough clinical examination. Arrive at a logical working diagnosis after examination. • To order appropriate investigations. Plan & institute line of treatment which is need based, cost effective & appropriate for common ailments taking into consideration. • To Recognize situations which call for urgent/ early treatment at secondary and tertiary centres and make a prompt referral of such patients after giving first aid or emergency treatment. Demonstrate interpersonal & communication skill befitting a physician in order to discuss outcome with patient and family. Determine gestational age. Maintain an ethical behavior. Obtain informed consent for any examination / procedure. Motivate colleagues, community and patient to participate actively in national health programmes. To write a complete case record with all necessary details. To write a proper discharge summary with all relevant information. • To write a proper referral note to secondary and tertiary institutions with all necessary details. To assess the need for and issue proper

	medical certificate to patient for various purposes. To organise antenatal, postnatal & well baby clinics. • To plan & manage health camps and family welfare camps. To accept universal precaution for self protection against HIV, Hepatitis and counsel patients. To do & examine a wet film vaginal smear for Trichomoniasis and fungal infection. To take Pap smear • To take a punch biopsy of cervix. To conduct normal vaginal delivery. • To do artificial rupture of membranes. To perform & suture episiotomies. • To apply outlet forceps. To do postpartum tubectomy. To perform MTP in I trimester and to be able to do evacuation in incomplete abortions. To insert and remove IUCD. To be able to diagnose & provide emergency care for ante partum & postpartum haemorrhage
Program specific outcomes	• Outline the anatomy, physiology and pathophysiology of the reproductive system and the common conditions affecting it. • Detect normal pregnancy, labour puerperium and manage the problems he/she is likely to encounter therein. • List the leading causes of maternal and perinatal morbidity and mortality. Understand the principles of contraception and various techniques employed, methods of medical termination of pregnancy, sterilization and their complications. • Identify the use, abuse and side effects of drugs in pregnancy, premenopausal and post-menopausal periods. • Describe the national programme of maternal and child health and family welfare and their implementation at various levels. • Identify common gynaecological diseases and describe principles of their management. • State the indications, techniques and complications of surgeries like Caesarian section, laparotomy, abdominal and vaginal hysterectomy, Fothergill's operation and vacuum aspiration for M.T.P. • Examine a pregnant woman; recognise high risk pregnancies and make appropriate referrals. • Conduct a normal delivery, recognise complications and provide postnatal care. • Resuscitate the newborn and recognise congenital anomalies. • Advise a couple on the use of various available contraceptive devices and assist in insertion in and removal of intra-uterine contraceptive devices. • Perform pelvic examination, diagnose and manage common gynaecological problems including early detection of genital malignancies. • Make a vaginal cytological smear, perform a post coital test and wet vaginal smear examination for Trichomonas vaginalis, moniliasis and gram stain for gonorrhoea. • Interpretation of data of investigations like biochemical, histopathological, radiological, ultrasound etc
Course	• At the end of the course the students should have to Provide

outcomes	peri-conceptional counseling and antenatal care, Identify high-risk pregnancies and refer appropriately, Conduct normal deliveries, using safe delivery practices in the primary and secondary care settings, Prescribe drugs safely and appropriately in pregnancy and lactation, Diagnose complications of labor, institute primary care and refer in a timely manner, vi. Perform early neonatal resuscitation, Provide postnatal care, including education in breast-feeding, Counsel and support couples in the correct choice of contraception, Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetric patient, Apply medico-legal principles as they apply to tubectomy, Medical Termination of Pregnancy (MTP) and Pre-conception and Prenatal Diagnostic Techniques (PC PNDT Act).

MBBS :PAEDIATRICS

Program outcomes	• At the end of clinical posting, an undergraduate should have the following knowledge / skill. He /she should be able to perform the following: - Early diagnosis of Paediatric/Neonatal diseases and give appropriate treatment. Interpret various diagnostic tests. • Perform routine investigations and therapeutic procedures. Counsel the parents, and relatives regarding the nature of illness and its risks. Perform efficient cardio pulmonary resuscitation. • Identify and initiate treatment for various emergencies / Identify critical illness needing referral to tertiary centres. • Discharge Medico-legal responsibilities. Be aware of and participate in National programmes Motivate patients for Diagnostic autopsy. Skills At the end of the course the students shall be able to: a. Obtain a proper relevant history and perform a humane and thorough clinical examination of all systems in children including neonates. b.Arrive at a logical comprehensive diagnosis after clinical examination. c. Order appropriate investigations keeping in mind their need, relevance and cost effectiveness. d.Plan and institute a line of treatment which is need based, cost effective and appropriate for common ailments taking into consideration – i. Patient, ii. Disease, iii.Socio-economic status, iv. Institutional / Governmental guidelines. e. Identify situations where referral to secondary or tertiary level is needed and referring promptly after first aid or emergency treatment. f. Show empathy and humane approach towards patient, relatives and attendants. g. Develop a proper professional attitude towards patient, colleagues and other staff. h. Maintain ethics in medical practice. i. Monitor growth of the child and development and diagnose the abnormal. j. Assess and treat fluid / electrolyte disorders and acid – base

	imbalance. k. Assess dehydration and treat diarrheal illness including preparation of ORS. l. Early detection of Nutritional disorders and treatment. m. Be able to write a complete case sheet. n. Write a proper discharge summary. o. Organize antenatal, postnatal, well baby and other clinics. p. Motivate patients and community to participate in National Health programmes. q. Organize and teach first aid to paramedics, with reference to pediatric age group. r. Adopt universal precautions against HIV. s. Maintain cold chain and reverse cold chain. t. Perform and read Mantoux test. u.Safe injection practices.
Program specific outcomes	• Describe the normal growth and development during foetal life, neonatal period, childhood and adolescence and outline deviations thereof. • Describe the common paediatric disorders and emergencies in terms of epidemiology, etiopathogenesis, clinical manifestations, diagnosis, rational therapy and rehabilitation. • State age related requirements of calories, nutrients, fluids, drugs etc. in health and disease. • describe preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisonings, accidents and child abuse • Outline national programmes relating to child health including immunization programmes. • Take a detailed pediatric history, conduct an appropriate physical examination of children including neonates, make clinical diagnosis, conduct common bedside investigative procedures, interpret common laboratory investigation results and plan and institute therapy. • take anthropometric measurements, resuscitate newborn infants at birth, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current national programs, perform venesection, start an intravenous saline and provide nasogastric feeding • Conduct diagnostic procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural tap and ascitic tap. • distinguish between normal newborn babies and those requiring special care and institute early care to all new born babies including care of preterm and low birth weight babies, provide correct guidance and counselling in breast feeding. • provide ambulatory care to all sick children, identify indications for specialized/inpatient care and ensure timely referral of those who require hospitalization
Course outcomes	• At the end of the course the students should have the Ability to recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents

	and refer as may be appropriate, Ability to perform procedures as indicated for children of all ages in the primary care setting, Ability to recognize children with special needs and refer appropriately, Ability to promote health and prevent diseases in children, Ability to participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy, vii. Ability to communicate appropriately and effectively

PARAMEDICAL COURSES

BASLP (Bachelor of Audiology Speech & Language Pathology)

Program outcomes	• This course enables the students to acquire professional knowledge in prevention, identification, assessment, habilitation and rehabilitation of speech, language, hearing, balancing and swallowing aspects. • Adequate emphasis is to be placed on cultivating logical and scientific habits of thoughts, clarity of expression, independence of judgment and ability to collect and analyze information and to correlate them. • The educational process should be placed in historical background as an evolving process and not merely as an acquisition of large number of disjointed facts without a proper perspective. The history of the field with reference to its evolution both in this country and rest of the world should form a part of this process. • Lectures alone are generally not adequate as a method of training and are a poor means of transferring / acquiring information and even less effective at skill development and in generating the appropriate attitudes. Every effort should be made to encourage the use of active methods related to demonstrations and on firsthand experience. Students will be encouraged to learn in small groups through peer interactions, so as to gain maximal experience through contacts with patients and the communities in which they live. While the curriculum objectives often refer to areas of knowledge or science, they are best taught in a setting of clinical relevance and hands on experience for students who assimilate and make this knowledge a part of their own working skills. • Clinics should be organized in small groups so that a teacher can give personal attention to each student with a view to improve his skill and competence in handling the patient. • Proper records of the work should be maintained which will form the basis of the student's internal assessment for practicals and should be available for the inspectors at the time of inspection of the

	college by the Rehabilitation Council of India (RCI).
Program specific outcomes	• Audiology and Speech-Language Pathology (BASLP) Professionals are concerned with evaluation, treatment and research in human communication and its disorders. Speech-language pathologists assess and treat persons of all ages with speech, language, voice, and fluency disorders. • They may also work with people who have oral motor problems that cause eating and swallowing difficulties. They use special instruments, as well as written and oral tests, to determine the nature and extent of impairment, and to record and analyze speech irregularities. For individuals with little or no speech, speech-language pathologists select augmentative & alternative communication systems, including automated devices and sign language, and teach their use for better communication.Audiologists specialize in prevention, identification, assessment, and rehabilitation of hearing disorders. They use a variety of testing devices to measure aspects of an individual's hearing sensitivity. • When Hearing Loss exists, they determine the nature and extent of the hearing loss and recommend appropriate treatment, including hearing aids or other assistive devices. Audiologists also test noise levels in workplaces, industries and conduct hearing conservation programs & provide ear protection devices.
Course outcomes	• At the end of the course the student should to equip with knowledge and skills to function as Audiologists and Speech Language Pathologists in different work settings understand concepts in speech, language, communication, hearing and disability screen, evaluate, diagnose and assess the severity of different disorders related to speech, language, swallowing and hearing, manage speech, language, swallowing and hearing disorders across life span counsel persons with disorders of communication and their family members rehabilitate persons with speech, language, swallowing and hearing disorders • Prevent speech, language, swallowing and hearing disorders • liaise with professionals in allied fields and other stake holders • Implement public awareness and education program • Undertake advocacy measures on behalf of and for persons with speech language and hearing disorders.

MASLP (Master of Audiology Speech & Language Pathology)

Program	• To train the student to evaluate and learn specific needs of the

outcomes	client, need for amplificatory / assistive devices, educational, vocational and psychosocial and communicative demands. • To prepare the student for programs and intervention strategies as per the different needs of the clients. • To equip the student to critically review application of task analysis, program learning techniques wherever required in management of the clients
Program Specific outcomes	• To orient the student on the basics of statistics, and its application to the field of speech and hearing. 1. To enable the student to select and carry out appropriate statistical calculations as required for research in the field of speech and hearing. 2. To equip the students with necessary knowledge to be able to interpret the analysed statistical related data to the field of speech and hearing. 3. To familiarize the students on the importance and applications of research methods and techniques applicable to the field of speech and hearing. • To equip the student to understand the linguistic basis of different speech language disorders. 2. To train the students to record, analyse and transcribe clinical samples • To equip the student to understand the basics of various aspects of speech and language processing. • To equip the student to understand the characteristics, diagnosis and rehabilitation aspects of voice and related disorders. 2. To equip the student to understand the characteristics, diagnosis and rehabilitation aspects of fluency disorders . • To equip the student to understand the physiological basis of auditory system, inter-relation and dependency of structure and function with nervous system. • To equip the student with thorough knowledge of acquisition of language. 2. To equip the student to differently diagnose various child language disorders. 3. To understand the current advances in assessment and intervention for child language disorders. • To equip the student to understand advances in brain and language relationship 2. To familiarize the student with respect to advances in assessment and management of various language disorders in adults. • To equip the student with knowledge as required for therotical and practical understanding of disorders of phonology, specific requirements in different languages and different disorders. 2. To

	train the student in differential diagnosis and management of motor speech disorders. • To familiarise the student on auditory manifestations of different disorders and clinical features exhibited. 2. To give theoretical rationale for various auditory tests and their findings in different auditory pathology, correlating different auditory and non auditory findings in different disorders.
Course Outcomes	• At the end of the course the students should be equipped with knowledge and skills to function as Audiologists and Speech Language Pathologists in different work settings understand concepts in speech, language, communication, hearing and disability screen, evaluate, diagnose and assess the severity of different disorders related to speech, language, swallowing and hearing, manage speech, language, swallowing and hearing disorders across life span counsel persons with disorders of communication and their family members rehabilitate persons with speech, language, swallowing and hearing disorders • prevent speech, language, swallowing and hearing disorders • liaise with professionals in allied fields and other stake holders • implement public awareness and education program • Undertake advocacy measures on behalf of and for persons with speech language and hearing disorders.

B.Optomety

Program outcomes	at the end of the course the students should be able to demonstrate knowledge demonstrate the ability to undertake eye tests autonomously and in cooperation with the patient and also when required to refer a patient to other health care services – demonstrate the ability to participate in optometric habilitation and rehabilitation in the health care services – demonstrate the ability to apply his or her knowledge to deal with different situations, phenomena and issues on the basis of the needs of individuals and groups – demonstrate the ability to inform and instruct different audiences – demonstrate the ability to present and discuss assessments and interventions with those concerned in speech and writing and also to document them in accordance with the relevant statutory provisions – demonstrate the capacity for teamwork and cooperation with other professional categories, and – demonstrate the ability to review, assess and use relevant information critically and to discuss new data, phenomena and issues with various audiences and so contribute to the development of the profession and professional practice. Judgment and approach For a Degree of Bachelor of Science in Optometry the student shall – demonstrate self-awareness and the capacity for empathy – demonstrate the ability to assess

	interventions informed by the relevant disciplinary, social and ethical aspects and taking particular account of human rights – demonstrate the ability to adopt a professional approach to clients or patients and those close to them. demonstrate the ability to identify the need for further knowledge and undertake ongoing development of his or her skills.
Program Specific outcomes	Diagnosis of visual problem, orthoptics and vision training, optometric counseling of patients with vision problems, designing and fitting of spectacles, contact lens and low vision aids.
Course Outcomes	• At the end of the course the student should have all the theoretical and practical knowledge and skills needed to become a qualified optometrist. As against common belief, optometrists do much more than supplying spectacles and contact lenses. An optometric examination includes screening for signs of diseases that may need medical attention. Optometrists may also offer specialist advice and treatment to patients having problems with low vision, binocular vision, and those with specific learning difficulties, such as dyslexia.

B. Sc Renal Dialysis Technology

Program outcomes	The course is designed to train the student with core knowledge in basic of clinical science and clinical nephrology procedures like • Hemodialysis • Peritoneal dialysis • CRRT • Hemodiafiltration • SLED • MARS • Plasmapheresis • Advanced dialysis • Maintenance of dialysis machines and water treatment plant • A.V fistula &A.V graft cannulation and assisting nephrologists. Assisting in emergency care and to develop teaching as well as update of skills and Research
Program specific outcomes	• Able to dialysis prescription interpretation, extracorporeal circuit and dialyzer set up and maintenance, patient preparation, equipment monitoring, venipuncture and local anesthesia administration, taking vital signs, documentation and communication, safety and sanitation, emergency intervention and professional standards and ethics.

Course Outcomes	• At the end of the course the students should be able to evaluate, operate & troubleshoot dialysis machines. They prepare the patients & monitor dialysis treatment. They frame protocols for equipment evaluation & Training materials for patients & staff under the expert guidance of qualified doctors & nurses

B. Sc (Medical Imaging Technology)

Program outcomes	This course is an undergraduate Medical Lab Technologist course. Medical imaging technology is an technique and process used to create image of the human body or parts and function, thereof, for clinical purposes.
Program Specific outcomes	Experience in the department of Radiology from day one onwards will enable the student to understand the nature of the illness beginning with routine imaging to CT and MRI scans. The students will receive excellent and exhaustive training in these fields to be able to assist senior radiologists.
Course Outcomes	At the end of the course the students will be performs the radiographic and imaging examinations like Radiography, Computed Tomography, Magnetic Resonance Imaging, Mammography etc that creates the images needed for diagnosis by the radiologists / physicians. ii. Technologists work under the direction of radiologists in hospitals, clinics and specialized imaging centers who interpret medical images. For the images to be interpreted correctly by the radiologist, the imaging examination must be performed properly by a radiologic technologist. iii. The technologist role is very important in aiding in the diagnosis and treatment of illness and injuries. iv. Technologists who perform diagnostic imaging examinations are responsible for accurately positioning patients, delivering the lowest radiation dose possible during each examination and ensuring that a quality diagnostic image is produced.

M.Phil. clinical Psychology

Program outcomes	• The course is developed as a rigorous two-year program with extensive theoretical inputs and widespread clinical experience to acquire the necessary skills in the area of Clinical Psychology. On completion of the course, the trainee is expected to perform the following \functions: • Diagnose mental health problems. • Conceptualize specific adult and child ment

	• al health problems within a psychological • framework, giving due consideration to psychosocial/ contextual factors, and carryout relevant treatment/management. • Apply psychological principles and technique • s in rehabilitating persons with mental health problems and disabilities. • Work with the psychosocial dimensions of physical diseases, formulate and undertake focused/targeted psychosocial interventions. • Work with community to promote health, quality-of-life and psycho-logical well-being. • Undertake research in the areas of clinical psychology such as, mental health/illness, physical health/diseases and relevant societal issues viz. misconception, stigma, discrimination, social tension, gender construction, life style etc. • Undertake responsibilities connected with teaching and training in core and allied areas of Clinical Psychology. • Undertake administrative and supervisory/decision-making responsibilities in mental health area. • Provide expert testimony in the court of law assuming different roles.
Program Specific outcomes	Diagnose mental health problems. • Conceptualize specific adult and child mental health problems within a psychological framework, giving due • Consideration to psychosocial/ contextual factors, and carryout relevant treatment/management. • Apply psychological principles and techniques in rehabilitating persons with mental health problems and disabilities. • Work with the psychosocial dimensions of physical diseases, formulate and undertake focused/targeted psychosocial interventions. • Work with community to promote health, quality-of-life and psycho-logical well-being. • Undertake research in the areas of clinical psychology such as, mental health/illness, physical health/diseases and relevant societal issues viz. misconception, stigma, discrimination, social tension, gender con-struction, life style etc. • Undertake responsibilities connected with teaching and training in core and allied areas of Clinical Psychology. • Undertake administrative and supervisory/decision-making responsibilities in mental health area. • Provide expert testimony in the court of law assuming different roles

Course Outcomes	• The aim of this course is provide professional training in clinical psychology that will lead to a career in this area. It includes training in psychopathology assessment and therapeutic intervention. The course includes training in psycho-diagnostics, psychotherapy, Rehabilitative services and to work towards promoting the well-being and quality-of-life of individuals.

M.Phil (Psychiatry Social Work)

Program Specific outcomes	The psychiatric social work trainee is expected to full fill the following objectives on completion of course. • Working on Case History Taking and diagnosis the mental disorders • Assessment of psychosocial problems and plan for psychosocial interventions • Counseling Patients and Family members • Working with groups through Group Psychotherapy • Psycho education for Individuals, Families and Groups • Working with couples through Marital therapy • Working with families through various approaches of Family Therapy • Psychosocial Rehabilitation for Chronic Mental Illness • Extending services for Community Mental Health for promoting and preventive aspects of mental health problems. • Psychosocial care in Disaster Mental Health • Involve in the training other professionals • Make Home visits as part of treatment process • Undertake research activities in the areas of psychiatric social work • Preparing documentation in field of psychiatric social work Awareness of legal administrative issues involved in psychiatric
Program specific outcomes	• To address manpower requirements in the field of psychiatric social work • To strengthen Multi-disciplinary approach such as • psychiatry psychology and • allied disciplines to understand mental illness from • the Psycho-Social Perspectives to provide Comprehensive and qualitative service • To manage and provide psychosocial care of the mentally ill persons in • clinical and community settings • To provide adequate knowledge and expertise in the areas of psychosocial • Intervention and there by improve the quality of life of persons with mental • Illness • To imbibe research activities in psychiatric Social Work interventions. • To keep pace with the development in • other related disciplines for effective management of psychiatric patients.
Course Outcomes	At the end of the course the students should be able to • To strengthen Multi-disciplinary approach such as psychiatry psychology and allied disciplines to understand mental illness from the Psycho-Social • Perspectives to provide Comprehensive and qualitative service • To manage and provide psychosocialcare of the mentally ill persons in clinical and community settings

	• To provide adequate knowledge and expertise in the areas of psychosocial • Intervention and there by improve the quality of life of persons with mental Illness • To imbibe research activities in psychiatric Social Work interventions. • To keep pace with the development inother related disciplines for effective management of psychiatric patients.

MHA (Master of Hospital Administration)

Program outcomes	• Impart the theoretical and practical knowledge to the students in the field of managing the Medical and Health services. • Provide social, economic, cultural, political, policy, legal, ethical perspective of health and health services within India and at international level. • Provide theoretical base of Management of health organisations. • Provide knowledge about planning and organising hospital and healthcare • organisations/ services/ activities. • Provide adequate knowledge of various functions concerned with the management of various aspects of the organisation like human, financial, commercial, strategy, marketing, quality, materials & equipments, information.
Program specific outcomes	• Provide opportunity of acquiring in-depth knowledge of Management of Hospital and Healthcare institutions to the individuals working in Hospitals and other Healthcare organisations, and those seeking career in healthcare field so to provide them with greater career opportunities. • In view of acute scarcity of trained professional managers an administrators to manage medical and health services efficiently and effectively, create a pool of trained manpower that will enable the country to meet the challenges of providing quality healthcare to the people of India at cost affordable to the people and the country
Course outcomes	• At the end of the course the student must have an in depth knowledge in the field of hospital administration. • Able to apply the principles of hospital management in providing qualitative care in hospital settings at all levels. • To train the candidate in developing better leadership skills to lead the hospital in the context of health system • Able to apply the concepts of organizational behavior and human resource management for better personnel management in hospital environment

	• Able to apply the skills and knowledge for practical orientation and implementation of strategies with relation to modern hospitals

M.Sc. Medical Anatomy

Program outcomes	The objective of the program is to provide comprehensive knowledge of the gross and microscopic structure and development of human anatomy to provide a basis for a understanding of the clinical correlation of organs of structures involved and anatomical basis for the disease presentation.
Program Specific outcomes	(i) Comprehend the normal disposition, clinical relevant interrelationships, functional and cross-sectional anatomy of various structures in the body. (ii) Demonstrate knowledge of the basic principles and sequential development of the organs and systems
Course Outcomes	At the end of the course the student should i) Identify and locate all the structures of the body and mark topography of the living anatomy. (ii)Identify the organs and tissues under microscope (iii) Principles of karyotyping and identify gross congenital anomalies (iv) Understand clinical basis of common clinical procedures ie. Intra-muscular and intravenous injection, lumbar puncture etc.

M. Sc. Medical Physiology

Program outcomes	The objectives of the program are to provide comprehensive knowledge in Physiology aims at providing the knowledge of the normal functions of the organ systems of the body to facilitate an understanding of the physiological basis of health and disease. knowledge of the physiology of the major systems: endocrine, cardiovascular, muscle, respiratory, renal, and gastrointestinal, as well as selected diseases that affect these systems; integration of these individual facts in order to understand how organ systems work independently and interdependently in the body

Program Specific outcomes	(i) Explain the normal functioning of all the organs and interactions for well coordinated total body function. (ii) Assess relative contribution of each organ system to the maintenance of the milieu interior. (iii) Elucidate physiological aspects of normal growth and development Physiological principles underlying pathogenesis and treatment of disease
Course Outcomes	At the end of the course the student should (i) Conduct experiments designed for the study of physiological phenomena.. (ii)Interpret experiment data (iii) Distinguish normal and abnormal data derived as a result of tests performed and observed in the laboratory

M. Sc. Medical Biochemistry

Program outcomes	At the end of the course the students should be able to • Describe the central role of biochemistry as a core discipline within the medical sciences. Describe the principles and fundamental concepts of biochemistry and have an awareness of how molecules, pathways, cells and organs interact in a controlled fashion to create and maintain a living organism. • Knowledge on the relationship between the structure of biomolecules and their function. • Perform a selected number of biochemical techniques. • Perform calculations using chemistry/biochemistry-based formulae in a biomedical laboratory setting. • Describe key applications of biochemistry which are relevant to biomedical/pharmaceutical sciences, pharmacy and laboratory medicine
Program Specific outcomes	(i) Describe the molecular and functional organization of a cell and list its sub-cellular components. (ii) Explain the biochemical basis of inherited disorders with their associated sequelae.

	(iii) Outline the molecular mechanisms of gene expression and regulation, the principles of genetic engineering and their applications in medicine. (iv) Familiarize with the principles of various conventional and specialized laboratory investigations and instrumentation analysis an interpretation of a given data.
Course Outcomes	At the end of the course the student should (i) Make use of conventional techniques / instruments to perform biochemical analysis relevant to clinical screening and diagnosis. (ii)Analyze and interpret investigations data. (iii) Demonstrate the skills of solving scientific and clinical problems and decision making.

M. Sc. Medical Microbiology

Program outcomes	At the end of the course, the student shall have achieved the following overall objectives: • Knowledge of the morphology, genetics, growth characteristics, laboratory identification, habitat, transmission and pathogenicity of viruses, bacteria, fungi and parasites commonly associated with human infections. • Acquired practical skills in the laboratory diagnosis of human infections caused by viruses, bacterial, fungi and other parasites • An understanding of the applications of molecular biology in the diagnosis of human infections • Understood the safety and public health aspects of virus, bacterial, fungal and other parasitic infections and the principles of prevention and control (v) Acquired the knowledge and skills required to establish and manage a diagnostic microbiology laboratory • Understood current trends in medical microbiology and be able to critically appraise published work • Be able to communicate information clearly, both verbally and inwriting • Demonstrate an ability to design, undertake and interpret a

	research project and present it in the form of a dissertation.
Program Specific outcomes	(i) Theoretical and practical training is given to the candidates in the specialties of Microbiology so that they can participate in good patient care and prevention of infectious disease in the community. (ii) Introduction to basic research methodology to conduct fundamental and applied research. (iii) Trained in teaching methods that enables them to take up teaching assignments.
Course Outcomes	At the end of the course the student should (i) Establish good laboratory medicine in hospitals and community in the field of Bacteriology, Immunology, Parasitology, Mycology and Virology (ii)Carry out applied and fundamental research in various branched of Microbiology (iii) Undertake teaching in Medical Institutions.