

Sl. No.	Name of the Program	Name of the Course	Course Outcome
1	Post Graduate	Anatomy	<p>At the end of the course, the student should have acquired following competencies:</p> <p><b>A. Cognitive domain:</b></p> <ol style="list-style-type: none"> <li>1. Describe gross anatomy of entire body including upper limb, lower limb, thorax, abdomen, pelvis, perineum, head and neck, brain and spinal cord.</li> <li>2. Explain the normal disposition of gross structure, and their interrelationship in the human body. She/He should be able to analyze the integrated functions of organs systems and locate the site of gross lesions according to deficits encountered.</li> <li>3. Describe the process of gametogenesis, fertilization, implantation and placenta formation in early human embryonic development along with its variation and applied anatomy.</li> <li>4. Demonstrate knowledge about the sequential development of organs and systems along with its clinical anatomy, recognize critical stages of development and effects of common teratogens, genetic mutations and environmental hazards. She/He should be able to explain developmental basis of variations and congenital anomalies.</li> <li>5. Explain the principles of light, transmission and scanning, compound, electron, fluorescent and virtual microscopy.</li> <li>6. Describe the microscopic structure of various tissues &amp; organs and correlate structure with functions as a prerequisite for understanding the altered state in various disease processes.</li> <li>7. Demonstrate knowledge about cell and its components, cell cycle, cellular differentiation and proliferation.</li> <li>8. Describe structure, number, classification, abnormalities and syndromes related to human chromosomes.</li> <li>9. Describe important procedures in cytogenetics and molecular genetics with its application.</li> <li>10. Demonstrate knowledge about single gene pattern inheritance, intermediate pattern and multiple alleles, mutations, non-Mendelian inheritance, mitochondrial inheritance, genome imprinting and parental disomy.</li> <li>11. Describe multifactorial pattern of inheritance, teratology, structure gene, molecular screening, cancer genetics and pharmacogenetics.</li> <li>12. Demonstrate knowledge about reproduction genetics, assisted reproduction, prenatal diagnosis, genetic counseling and ethics in genetics.</li> </ol>

			<ol style="list-style-type: none"> <li>13. Explain principles of gene therapy and its applied knowledge.</li> <li>14. Describe immune system and cell types involved in defense mechanisms of the body. Also explain gross features, cytoarchitecture, functions, development and histogenesis of various primary and secondary lymphoid organs in the body.</li> <li>15. Demonstrate knowledge about common techniques employed in cellular immunology and histocompatibility testing.</li> <li>16. Demonstrate applications of knowledge of structure &amp; development of tissue organ system to comprehend deviations from normal.</li> <li>17. Demonstrate knowledge about recent advances in medical sciences which facilitate comprehension of structure function correlations and applications in clinical problem solving.</li> <li>18. Explain collection, maintenance and application of stem cells, cryobanking and principles of organ donation from recently dead bodies.</li> <li>19. Demonstrate knowledge about surface marking of all regions of the body.</li> <li>20. Able to interpret various radiographs of the body, normal CT Scan, ultrasound and MRI.</li> <li>21. Demonstrate knowledge about different anthropological traits and use of related instruments.</li> <li>22. Demonstrate knowledge about outline of comparative anatomy of whole body and basic human evolution</li> <li>23. Demonstrate knowledge about identification of human bones, determination of sex, age, and height for medico legal application of anatomy</li> </ol> <p><b>B. Affective domain:</b></p> <ol style="list-style-type: none"> <li>1. Demonstrate self-awareness and personal development in routine conduct. (Self awareness)</li> <li>2. Communicate effectively with peers, students and teachers in various teaching learning activities. (Communication)</li> <li>3. Demonstrate due respect in handling human body parts &amp; cadavers during dissection. (Ethics &amp; Professionalism)</li> <li>4. Demonstrate humane touch while demonstrating living surface marking in subject/patient. (Ethics &amp; Professionalism)</li> <li>5. Acquire capacity of not letting his/her personal beliefs, prejudices and limitations come in the way of duty.</li> <li>6. Appreciate the issues of equity and social accountability while exposing students to early clinical exposure. (Equity and social accountability)</li> </ol>
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			<p><b>C. Psychomotor domain</b> At the end of the course the student should be able to:</p> <ol style="list-style-type: none"> <li>1. Identify, locate and demonstrate surface marking of clinically important structures in the cadaver and correlate it with living anatomy.</li> <li>2. Acquire mastery in dissection skills, embalming, tissue preparation, staining and museum preparation.</li> <li>3. Locate and identify clinically relevant structures in dissected cadavers.</li> <li>4. Locate and identify cells &amp; tissues under the microscope.</li> <li>5. Identify important structures visualized by imaging techniques, specifically radiographs, computerized tomography (CT) scans, MRI and ultrasonography.</li> <li>6. Demonstrate various movements at the important joints and actions of various groups of muscles in the human body.</li> <li>7. Demonstrate anatomical basis of common clinical procedures expected to be performed by a basic medical doctor.</li> <li>8. 8. Demonstrate different methods of teaching-learning and make presentations of the subject topics and research outputs</li> </ol>
2	Post Graduate	Physiology	<p>At the end of training course, a Post graduate student should have thorough knowledge of body with respect to.</p> <p><b>1. Cognitive domain:</b> All systems of body should be studied with respect to.</p> <ol style="list-style-type: none"> <li>a. Historical aspect.</li> <li>b. Evolution and development.</li> <li>c. Comparative Physiology.</li> <li>d. Structure - Gross and Electron microscopic and function at cellular level.</li> <li>e. Quantitative and Qualitative aspects.</li> <li>f. Regulatory mechanisms</li> <li>g. Variations in Physiological and pathological conditions.</li> <li>h. Applied physiology.</li> <li>i. Recent advances.</li> </ol> <p><b>2. Psychomotor domain :</b>PG students should be able.</p> <ol style="list-style-type: none"> <li>a. To perform human and Animal (Mammalian and Amphibian) experiments and also. Hematology experiments based on biophysical principles.</li> <li>b. To acquire history taking and clinical examination skills.</li> </ol> <p><b>3. Affective domain:</b></p> <ol style="list-style-type: none"> <li>a. A Post graduate student should develop</li> </ol>

			<p>communication skills to interact with students, Colleagues, Superiors and others staff members.</p> <p>b. He / She should be able to work as a member of a team to carry out teaching as well as research activities.</p> <p>c. He /She should have right attitude (Medical ethics) towards teaching profession.</p>
3	Post Graduate	Biochemistry	<p>At the end of the MD training programme in Biochemistry, the post graduate student should have acquired competencies in the following areas, as detailed below.</p> <ol style="list-style-type: none"> <li>1. Acquisition of knowledge The student should be able to explain clearly concepts and principles of biochemistry and cell biology, including correlations of these with cellular and molecular processes involved in health and disease.</li> <li>2. Teaching and training The student should be able to effectively teach undergraduate students in medicine and allied health science courses so they become competent health care professionals and able to contribute to training of postgraduate post graduate students.</li> <li>3. Diagnostic services the student should be able to set up/supervise/manage a diagnostic laboratory in Biochemistry in a hospital, ensuring quality control, and providing a reliable support service. The student should be able to provide clinicians with consultation services for diagnostic tests in biochemistry and in interpretation of laboratory results.</li> <li>4. Research The student should be able to carry out a research project from planning to publication and be able to pursue academic interests and continue life-long learning to become more experienced in all the above areas and to eventually be able to guide postgraduates in their thesis work.</li> </ol>
4	Post Graduate	Microbiology	<p>At the end of the course the students will be able to:</p> <ol style="list-style-type: none"> <li>a. Establish good “Laboratory medicine” in hospital and community in the field of bacteriology, virology, Parasitology, immunology and mycology.</li> <li>b. Participate in hospital infection control and guide appropriate hospital waste disposal.</li> <li>c. Undertake teaching assignment of microbiology in a medical college.</li> <li>d. Undergo specialization in any of the above subspecialties.</li> <li>e. Carry out applied and fundamental research in various branches of medicine involving microbiological work.</li> </ol>

			f. Assist to conduct investigations of outbreaks of infectious diseases in public health field.
5	Post Graduate	Pathology	<p>Objectives in the cognitive, psychomotor and affective domains are:</p> <p><b>A. Cognitive Domain</b></p> <ol style="list-style-type: none"> <li>1. Diagnose routine and complex clinical problems on the basis of histopathology (surgical pathology) and cytopathology specimens, blood and bone marrow examination and various tests of Laboratory Medicine (clinical pathology, clinical biochemistry) as well as Blood Banking (Transfusion Medicine).</li> <li>2. Interpret and correlate clinical and laboratory data so that clinical manifestations of diseases can be explained.</li> <li>3. Advise on the appropriate specimens and tests necessary to arrive at a diagnosis in a problematic case.</li> <li>4. Correlate clinical and laboratory findings with pathology findings at autopsy, identify miscorrelations and the causes of death due to diseases (apart from purely metabolic causes).</li> <li>5. Should be able to teach Pathology to undergraduates, postgraduates, nurses and paramedical staff including laboratory personnel.</li> <li>6. Plan, execute, analyse and present research work.</li> <li>7. Make and record observations systematically and maintain accurate records of tests and their results for reasonable periods of time. Identify problems in the laboratory, offer solutions thereof and maintain a high order of quality control.</li> <li>8. Capable of safe and effective disposal of laboratory waste.</li> <li>9. Able to supervise and work with subordinates and colleagues in a laboratory.</li> </ol> <p><b>B. Affective Domain:</b></p> <ol style="list-style-type: none"> <li>1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.</li> <li>2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.</li> <li>3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.</li> </ol> <p><b>C. Psychomotor Domain:</b></p> <ol style="list-style-type: none"> <li>1. Able to perform routine tests in a Pathology</li> </ol>

			<p>Laboratory including grossing of specimens, processing, cutting of paraffin and frozen sections, making smears, and staining.</p> <ol style="list-style-type: none"> <li>2. Able to collect specimens by routinely performing non-invasive out-patient procedures such as venipuncture, finger-prick, fine needle aspiration of superficial lumps and bone-marrow aspirates, and provide appropriate help to colleagues performing an invasive procedure such as a biopsy or an imaging guided biopsy.</li> <li>3. Perform an autopsy, dissect various organ complexes and display the gross findings.</li> <li>4. Should be familiar with the function, handling and routine care of equipments in the laboratory.</li> </ol>
6	Post Graduate	Forensic Medicine	<p>By the end of the course, the student should have acquired knowledge (cognitive domain), professionalism (affective domain) and skills (psychomotor domain) as given below:</p> <p><b>A. Cognitive domain:</b></p> <ol style="list-style-type: none"> <li>1. Describe the legal and medico-legal system in India.</li> <li>2. Acquire knowledge on the philosophy and guiding principles of Forensic Medicine course.</li> <li>3. Describe the programme goals and objectives of the Forensic Medicine course.</li> <li>4. Acquire knowledge on conduct of medico-legal autopsy independently with required physical assistance, prepare report and derive inferences.</li> <li>5. Outline the principles and objectives of postmortem examination.</li> <li>6. Describe the formalities and procedures of medico-legal autopsies in accordance with existing conventions and the law.</li> <li>7. Identify the role of anatomy, physiology, biochemistry, microbiology, pathology, blood bank, psychiatry, radiology, forensic science laboratory as well as other disciplines of medical science to logically arrive at a conclusion in medico-legal autopsies and examination of medico-legal cases.</li> <li>8. Describe the principles of the techniques used in toxicological laboratory namely TLC (Thin Layer Chromatography), GLC (Gas Liquid Chromatography), AAS (Atomic Absorption Spectrophotometry), HPLC (High Performance Liquid Chromatography) and Breath Alcohol Analyzer.</li> <li>9. Describe relevant legal/court procedures applicable to medico-legal/medical practice.</li> <li>10. Describe the general forensic principles of ballistics, serology, analytical toxicology and photography.</li> <li>11. Interpret, analyze and review medico-legal reports prepared by other medical officers at the time of need.</li> <li>12. Describe role of DNA profile and its application in</li> </ol>

			<p>medico-legal practice.</p> <ol style="list-style-type: none"> <li>13. Describe the law/s relating to poisons, drugs, cosmetics, narcotic drugs and psychotropic substances.</li> <li>14. Describe the legal and ethical aspects of Forensic Procedures including Narco-analysis, Brain mapping and Polygraph etc.</li> <li>15. Describe the medico-legal aspects of Psychiatry, addiction and mental health.</li> </ol> <p><b>B. Affective domain:</b></p> <ol style="list-style-type: none"> <li>1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the clinician or other colleagues to provide the best possible opinion.</li> <li>2. Should be able to follow ethical principles in dealings with patients, police personnel, relatives and other health personnel and to respect their rights.</li> <li>3. Follow medical etiquettes in dealing with each other.</li> <li>4. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.</li> </ol> <p><b>C. Psychomotor domain:</b></p> <p>At the end of the course, the student should acquire following skills and be able to:</p> <ol style="list-style-type: none"> <li>1. Perform medico-legal autopsy independently with required physical assistance, prepare report and derive inferences.</li> <li>2. Perform medico-legal examination of users of alcohol, drugs and poisons and prepare report.</li> <li>3. Perform medico-legal examination in cases of sexual offences and prepare report.</li> <li>4. Interpret histo-pathological, microbiological, radiological, chemical analysis, DNA profile and other investigative reports for medico-legal purposes.</li> <li>5. Perform medico-legal examination of bones, clothing, wet specimens and weapons.</li> <li>6. Depose as an expert witness in a court of Law on Medico-Legal matters.</li> <li>7. Examine, identify, prepare reports and initiate management on medico-legal cases in emergency set up.</li> <li>8. Identify and discharge all legal responsibilities in medico-legal matters.</li> <li>9. Plan, organize and supervise medico-legal work in general/teaching/district hospitals and in any health care set up.</li> <li>10. Collect, preserve and dispatch various samples and trace evidences to the concerned authorities in appropriate manner.</li> <li>11. Help and Advise authorities on matters related to</li> </ol>
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			<p>medical ethics and medico-legal issues.</p> <ol style="list-style-type: none"> <li>12. Discharge duties in respect of forensic, clinical, emergency, environmental, medico-legal and occupational aspects of toxicology.</li> <li>13. Plan, organize and manage toxicological laboratory services in any health care set up.</li> <li>14. Provide information and consultation on all aspects of toxicology to professionals, industry, Government and the public at large.</li> <li>15. Manage medico-legal responsibilities in mass disasters involving multiple deaths like fire, traffic accident, aircraft accident, rail accident and natural calamities.</li> <li>16. Do interaction with allied departments by rendering services in advanced laboratory investigations and relevant expert opinion.</li> <li>17. Participate in various workshops/ seminars/ journal clubs/ demonstration in the allied departments, to acquire various skills for collaborative research.</li> </ol>
7	Post Graduate	Pharmacology	<ol style="list-style-type: none"> <li>1. Demonstrate sound knowledge of general pharmacology principles like pharmacokinetics and pharmacodynamics of drugs, drug interactions and adverse effects.</li> <li>2. Study the effects of drugs on various systems in the body and rational drug therapy.</li> <li>3. Plan &amp; conduct lecture, practical demonstration, and tutorial classes for students of medical &amp; allied disciplines.</li> <li>4. Carry out screening of drugs for their pharmacological and toxicological profile.</li> <li>5. Carry out drug related literature search, formulate research projects and undertake the same.</li> <li>6. Present research findings in conferences (Oral/Poster sessions), critically review &amp; comment on research papers. Communicate research/ educational papers in peer reviewed journals.</li> <li>7. Measure drug levels in blood and other biological fluids using suitable qualitative &amp; quantitative methods and interpret the same in therapeutic/toxicological contest.</li> <li>8. Monitor adverse drug reactions. Carry out therapeutic audit &amp; provide drug information service to doctors/public.</li> <li>9. Use computer and IT tools for teaching, research&amp; presentation/publication of data.</li> <li>10. Preparation of protocols to conduct preclinical and clinical research independently.</li> <li>11. Demonstrate knowledge of National Health Policy, National list of essential medicine (NLEM), p- drug – concept and supervise drug management in a hospital.</li> <li>12. To function as an active member of Drugs and</li> </ol>

			<p>Therapeutics Committee (DTC).</p> <ol style="list-style-type: none"> <li>13. Drug Utilization Review (DUR)</li> <li>14. Assess emergency situations while carrying out drug trials and institute exigency management till appropriate assistance from clinical side is available.</li> <li>15. Plan and carry out both laboratory and clinical research with adherence to ethical principles and ICH – GCP/ GLP guidelines.</li> <li>16. Be aware of legal and ethical aspects of drug evaluation.</li> <li>17. Be aware of regulatory procedures needed to be carried out prior to the marketing of a new drug in India.</li> <li>18. Understand and apply ethical principles involved in animal and human research.</li> <li>19. Handle animals to conduct experiments e.g. screening of various drugs</li> <li>20. Perform qualitative and quantitative identification and estimation of drugs in different samples of body fluids.</li> <li>21. Develop skills as a self-directed learner, recognize continuing educational needs, use appropriate learning resources and be able to critically analyze relevant published literature.</li> <li>22. Function as a productive member of a team engaged in research, Medical education &amp; industry</li> </ol>
8	Post Graduate	Community Medicine	<ol style="list-style-type: none"> <li>1. To create a skilled cadre of medical professionals having expertise in application of principles of Public Health, Community Medicine and applied epidemiology, contributing meaningfully in formulating National Health Policies &amp; Programmes with a systems approach for overall human development.</li> <li>2. To standardize the teaching &amp; training approaches at postgraduate level for Community Medicine.</li> <li>3. Research: To formulate research questions, do literature search, conduct study with an appropriate study design and study tool; conduct data collection and management, data analysis and report.</li> </ol> <p><b>c) SPECIFIC COMPETENCIES:</b> At the end of the course the student should be able to acquire the following competencies under the three domains, Cognitive, Affective and Psychomotor:</p> <p><b>A. Cognitive domain:</b> (The student should be able to):</p> <ol style="list-style-type: none"> <li>1. Describe conceptual (and applied) understanding of Public Health, Community Medicine, clinical and disease-oriented approach, preventive approach &amp; health promotion &amp; disease control.</li> <li>2. Have knowledge about communicable and non communicable diseases, emerging and</li> </ol>

			<p>re-emerging diseases, their epidemiology, control and prevention.</p> <ol style="list-style-type: none"> <li>3. Apply the principles of epidemiology, health research and Bio-statistics, application of qualitative research methods, measurement of risk and other relevant health and morbidity indicators.</li> <li>4. To describe nutritional problems of the country, role of nutrition in health and disease, describe common nutritional disorders, develop nutrition plan for an individual based on his requirements and with concerns to special situations if applicable &amp; plan comprehensive programme to address issue of malnutrition in a given area for a specific group.</li> <li>5. To describe the concept of Environmental Health and its various determinants, identify environmental health issues in a given area/community, assess impact of adverse environmental conditions on health of human beings, plan awareness programmes at various levels on environmental issues and mobilize community resources and participation to safeguard from local adverse environmental conditions, should be able to provide technical advice for water purification, chlorination, installing gohar gas plant, construction of soakage pits etc. &amp; be a technical expert to advice on protection measures from adverse environmental exposure.</li> <li>6. To describe the working of Primary Health Care system, Panchayat Raj system, National Health Programmes, urban/rural differences, RCH, Demography and Family Welfare.</li> <li>7. Do orientation of the inter-linkage of health sector and non-health sector for promotion of Health &amp; control and prevention of diseases.</li> <li>8. Have knowledge of Health Care Administration, Health Management and Public Health Leadership &amp; have familiarity with administrative procedures and protocols. Understand and express implications of 'Poverty Line', 'Social Inclusion', 'Equity', 'taxations', 'Insurance' on Health care management.</li> <li>9. To describe Health Policy &amp; Plans, Medical Education technology, Information Technology and integration of alternative Health system including AYUSH &amp; have knowledge about role of media and its use in health.</li> <li>10. To describe the intricacies of Social &amp; Behavioral sciences and their applications &amp; Identify behavior pattern of individual or group of individuals detrimental or adversely affecting their health.</li> <li>11. To describe &amp; create awareness about various Public Health Legislations.</li> <li>12. To understand and describe International Health &amp;</li> </ol>
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			<p>Global Diseases surveillance &amp; Develop workable interventions for control and prevention of emerging and reemerging diseases at local, national and global level.</p> <ol style="list-style-type: none"> <li>13. To relate the history of symptoms with specific occupation, diagnostic criteria, preventive measures, identification of various hazards in a specific occupational environment and legislations.</li> <li>14. To keep abreast of recent advances in Public Health &amp; formulate feasible, optimal, sustainable, cost effective strategies in response to the advances in public health &amp; development.</li> <li>15. To describe the principles of Health Economics and apply it in various public health settings &amp; evaluate cost effectiveness and cost benefits of a Health Program.</li> <li>16. To explain and correlate common health problems (medical, social, environmental, economic and psychological) of urban slum dwellers, organization of health services in urban slum areas.</li> <li>17. Define and identify vulnerable, under-privileged high risk communities and their special needs.</li> <li>18. To categorize hospital waste and be able to guide for proper disposal.</li> <li>19. To provide a comprehensive plan for disaster management and mitigation of sufferings.</li> </ol> <p><b>B. Affective domain:</b></p> <ol style="list-style-type: none"> <li>1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.</li> <li>2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.</li> <li>3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff for effective teaching.</li> </ol> <p><b>C. Psychomotor domain:</b> The student should be able to perform independently the following:</p> <ol style="list-style-type: none"> <li>1. Conduct community surveys for assessment of health &amp; morbidity profile, epidemiological determinants, assessment of health needs, disease surveillance, evaluation of health programmes and community diagnosis.</li> <li>2. Conduct outbreak investigations, do spot maps,</li> </ol>
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			<p>predict disease trends, preparation of reports, planning and implementation of control measures.</p> <ol style="list-style-type: none"> <li>3. Demonstrate clinical skills of preparing case history, examination, provisional diagnosis, treatment and clinical case management and interpretation of laboratory findings. Conduct common procedures such as incision, drainage, dressings &amp; injections.</li> <li>4. Do data collection, compilation, tabular and graphical presentation, analysis and interpretation, applying appropriate statistical tests using computer-based software application for validation of findings.</li> <li>5. Conduct epidemiological research studies to establish cause-effect relationships in elaborating the epidemiology of diseases and health events.</li> <li>6. Develop appropriate IEC Material, assessment of community communication needs, training skills, counselling skills, conduct Health Education Programmes in urban and rural settings.</li> <li>7. Conduct dietary surveys, assessment of nutritional status, nutritive values of common food menus, detection of food adulterants, use of lactometer, recording and interpretation of growth and development charts.</li> <li>8. Use and apply various instruments and processes concerned with environmental health and biological waste management eg. waste collection, segregation and disposal as per protocols, needle-disposers, disinfection procedures. Also use of Dosimeters, Kata / Globe Thermometer, Slings Psychomotor, Gobar Gas Plant, Soakagepit, Solar Energy, functioning of ILRs, Deep Freezers, Cold Boxes, Vaccine Carriers.</li> <li>9. Identify different types of mosquitoes, detect vector breeding places and orientation of the methods of elimination of breeding places and placement of mosquito proof water tank.</li> <li>10. Conduct clinical screening of various diseases and organize community health camps involving community participation in urban and rural settings. Use of Snellen charts for vision, Ishihara's chart for colour blindness, tourniquet tests for dengue diagnosis in fever, BMI and other physical measurements of infants, children and adults, copper-T insertions, preparation of pap smear etc.</li> <li>11. Conduct tests for assessment of chlorine demand of water (Horrock's Apparatus), procedure of well-water and urban water-tank chlorination, assessment of chlorination levels, physical examination of water, methods of domestic water purification &amp; orientation in use of water filters.</li> <li>12. Prepare health project proposals with budgeting based on the project objectives.</li> </ol>
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9	Post Graduate	Ophthalmology	<ol style="list-style-type: none"> <li>1. 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.</li> <li>2. Who shall have mastered most of the competencies that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.</li> <li>3. Who shall be aware of the contemporary advances and developments in Ophthalmology</li> <li>4. Be aware of his or her own limitations to the application of the specialty in situations which warrant referral to major centre's or individuals more qualified to treat</li> <li>5. Contribute as an individual/or in a group of institution towards the fulfillment of national objectives with regard to prevention of blindness.</li> <li>6. Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology ; and</li> <li>7. Who shall have acquired the basic skills in teaching of the medical and paramedical professionals.</li> <li>8. Continue to evince keen interest on continuing in ophthalmology education irrespective whether he is in a teaching institution or is a practicing surgeon</li> </ol> <p><b>Specific Learning Objectives:</b> The specific learning objective of postgraduate training course in Ophthalmology would be to train a MBBS doctor who will:</p>

			<ol style="list-style-type: none"> <li>1. Practice Ophthalmology efficiently and effectively, backed by scientific knowledge and skill base.</li> <li>2. Exercise empathy and caring attitude and maintain high ethical standards.</li> <li>3. Who shall develops skills as a self-directed learner, recognize continuing education needs: select and use appropriate learning resources:</li> <li>4. Who shall learn basic concepts of research methodology and epidemiology and be able to critical analyze relevant published research literature.</li> <li>5. Be a motivated 'teacher'-keen to share his knowledge and skills with a colleague or a junior or any learner.</li> </ol>
10	Post Graduate	ENT	<p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. 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.</li> <li>2. Who shall have mastered most of the competencies, that are required to be practiced at</li> <li>3. the secondary and the tertiary levels of the health care delivery system.</li> <li>4. Who shall be aware of the contemporary advances and developments in Otolaryngology.</li> <li>5. Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology:</li> <li>6. Who shall have acquired the basic skills in teaching the medical and paramedicalstudents.</li> <li>7. Continue to evince keen interest in learning and teaching Otolaryngology whether he is in a teaching institution or is a practicing surgeon.</li> </ol> <p><b>Specific Objective:</b> The following objective is laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The Objectives may beconsidered under the subheadings.</p> <ol style="list-style-type: none"> <li>1. Knowledge (Cognitive domain)</li> <li>2. Skills (Psycho motor domain)</li> <li>3. Human values, Ethical practice and Communication abilities</li> </ol> <p><b>Knowledge:</b></p> <ol style="list-style-type: none"> <li>1. Demonstrate understanding of basic sciences relevant to this specialty.</li> <li>2. Describe Etiology, Pathophysiology, principals of diagnosis and management of common problems including emergencies, in adults and children.</li> <li>3. Describe indications and methods for fluid and electrolyte replacement therapy including blood transfusion.</li> </ol>

			<ol style="list-style-type: none"> <li>4. Describe common malignancies in the country and their management including prevention.</li> <li>5. Identify social, economic, environmental and emotional determinants in a given case, and take them into account for planning therapeutic measures.</li> <li>6. Recognize conditions that may be outside the area of his specialty, competence and to refer them to the proper specialties.</li> <li>7. Update oneself by self study and by attending course, conferences and seminars relevant to the specialty.</li> <li>8. Teach and guide his team, colleagues and other students.</li> <li>9. Undertake audit, use information technology tools and carry out research, both basic and clinical, with the aim of publishing his work and presenting his work at various scientific fora.</li> </ol> <p><b>Skills:</b></p> <ol style="list-style-type: none"> <li>1. Take a proper clinical history, examine the patients, perform essential diagnostic procedures and order relevant tests and interpret them to come to a reasonable diagnosis of various ailments in the region.</li> <li>2. Perform common operative procedures in Otorhinolaryngology.</li> <li>3. Provide basic and advances life saving support services (BLS &amp; ALS) in emergency situations.</li> <li>4. Undertake complete patient monitoring including the preoperative and post operative care of the patient.</li> <li>5. Should be able to perform OPD procedures; first observe the procedure, then do it under supervision of a teacher and then perform it independently.</li> </ol> <p><b>Human Values, Ethical practice and Communication abilities:</b></p> <p>Adopt ethical principles in all aspects of his/her practice. Professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.</p> <ol style="list-style-type: none"> <li>1. Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.</li> <li>2. Provide leadership qualities.</li> <li>3. Apply high moral and ethical standards while carrying out human or animal research.</li> <li>4. Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.</li> <li>5. Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.</li> </ol>
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11	Post Graduate	OBGY	<p>The objective of the course is to train an OBGyn Specialist who shall have:</p> <ol style="list-style-type: none"> <li>1. Mastered most of the competencies that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.</li> <li>2. Acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology,</li> <li>3. Acquired the basic skills in teaching of the medical and paramedical professionals.</li> <li>4. Who shall continue to evince keen interest in continuing Obstetrics &amp; Gynaecology education, irrespective of whether he or she is in a teaching institution or is a practicing Obstetrician &amp; Gynaecologist.</li> </ol> <p>The objectives are considered under the sub headings</p> <p>Knowledge (Cognitive domain)  Skills(Psychomotor domain)  Human values, Ethical practice &amp; Communication abilities(Affector domain)</p> <p><b>Specific Learning Objectives:</b>  The specific learning objectives of postgraduate training course in Obstetrics &amp; Gynecology would be to train an MBBS doctor who will:</p> <ol style="list-style-type: none"> <li>1. Practice Obstetrics &amp; Gynecology efficiently and effectively, backed by scientific knowledge and skill base.</li> <li>2. Exercise empathy and a caring attitude towards patients and maintain high ethical standards.</li> <li>3. Who shall develop skills as a self-directed learner, recognize continuing education needs and select &amp; use appropriate learning resources.</li> <li>4. Who shall learn basic concepts of research methodology &amp; epidemiology and be able to critically analyze relevant published research literature.</li> <li>5. Be a motivated ‘teacher’ – keen to share his/ her knowledge and skills with a colleague, junior or any learner.</li> <li>6. Offer to the community, the current quality of ‘Standard care’ in Obstetrics &amp; Gynecological diagnosis’ as well as therapeutics, medical or surgical, for common as well as referred conditions.</li> <li>7. Periodically self assess his/ her performance and keep abreast with ongoing advances in the field &amp; apply the same in his /her practice.</li> <li>8. Be aware of his / her own limitations to the application of the specialty in situations which warrant referral to major centers or individuals more qualified to treat.</li> </ol>
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12	Post Graduate	General Medicine	<p>The postgraduate training should enable the student to:</p> <ol style="list-style-type: none"> <li>1. Practice efficiently internal medicine specialty, backed by scientific knowledge including basic sciences and skills.</li> <li>2. Diagnose and manage majority of conditions in his specialty (clinically and with the help of relevant investigations)</li> <li>3. Exercise empathy and a caring attitude and maintain professional integrity, honesty and high ethical standards</li> <li>4. Plan and deliver comprehensive treatment using the principles of rational drug therapy</li> <li>5. Plan and advise measures for the prevention and rehabilitation of patients belonging to his specialty;</li> <li>6. Manage emergencies efficiently by providing Basic Life Support (BLS) and Advanced Life Support (ALS) in emergency situations</li> <li>7. Recognize conditions that may be outside the area of the specialty /competence and refer them to an appropriate specialist</li> <li>8. Demonstrate skills in documentation of case details including epidemiological data</li> <li>9. Play the assigned role in the implementation of National Health Programs</li> <li>10. Demonstrate competence in basic concepts of research methodology and clinical epidemiology; and preventive aspects of various disease states</li> <li>11. Be a motivated 'teacher' - defined as one keen to share knowledge and skills with a colleague or a junior or any learner</li> <li>12. Continue to evince keen interest in continuing education irrespective of whether he/she is in a teaching institution or is practicing and use appropriate learning resources</li> <li>13. Be well versed with his medico-legal responsibilities</li> <li>14. Undertake audit, use information technology tools and carry out research-both basic and clinical, with the aim of publishing the work and presenting the work at scientific forums.</li> <li>15. The student should be able to recognize the mental condition characterized by self absorption and</li> </ol>

			reduced ability to respond to the outside world (e.g. Autism), abnormal functioning in social interaction with or without repetitive behavior and/or poor communications, etc.
13	Post Graduate	Dermatology	<p>At the end of the course in Dermatology, Venereology and Leprosy, the student should demonstrate the following knowledge and skills to accomplish above mentioned goals.</p> <p><b>A. Knowledge (Cognitive domain)</b></p> <ol style="list-style-type: none"> <li>1. Understanding of relevant basic sciences (Anatomy, Physiology, Biochemistry, Microbiology, Pathology and Pharmacology)</li> <li>2. Describe structure, functions and development of human skin.</li> <li>3. Describe ultrastructural aspects of epidermis, epidermal appendages, dermoepidermal junction, dermis, and sub-cutis.</li> <li>4. Describe basic pathologic patterns and reactions of skin.</li> <li>5. In depth knowledge of history, epidemiology, etiology, pathogenesis, histopathology, differential diagnosis, general principles of diagnosis and management, control and prevention of dermatological conditions including leprosy, sexually transmitted infections and malignancies in adults and children</li> <li>6. Pharmacology of topical preparations and systemic drugs used in Dermatology, Venereology and Leprosy</li> <li>7. Various therapeutic options (both medical and surgical) available for a given disease and selection of appropriate therapy after discussing the same with patients and / or their relatives while considering the socio-economic, environmental and emotional determinants</li> <li>8. Acquire knowledge of the basics of laser operation and precautions which needs to be taken.</li> <li>9. Recognition of skin signs of systemic diseases and referring the patients to proper specialists</li> <li>10. Knowledge of information technology tools, and research methods and techniques</li> </ol> <p><b>B. Skills (Psychomotor domain)</b></p> <ol style="list-style-type: none"> <li>1. Elicitation of relevant and correct clinical history and presenting it in a chronological order.</li> <li>2. Complete clinical examination and demonstration of diagnostic clinical signs or tests that will help in arriving at the correct diagnosis of dermatoses and emergencies.</li> <li>3. Write a complete case record with meaningful progress notes, a proper discharge summary with relevant details, and an appropriate referral note to</li> </ol>

			<p>other specialists or secondary or tertiary health care centers.</p> <ol style="list-style-type: none"> <li>4. Informing efficiently and quickly, the relevant details of an emergency case to seniors or other specialists.</li> <li>5. Simple slide laboratory procedures or tests that are necessary to make bedside diagnosis.</li> <li>6. Appropriate and judicious use of laboratory tests to confirm the diagnosis.</li> <li>7. Be able to plan and deliver comprehensive treatment for diseases using principles of rational drug therapy.</li> <li>8. Be able to plan and advice measures for the prevention of infectious disease.</li> <li>9. Be able to plan rehabilitation of patient suffering from chronic illness and disability and those with special needs like leprosy.</li> <li>10. Be able to analyze and interpret histopathology slides.</li> <li>11. Method of application of various topical preparations and compresses used in the treatment of common dermatoses.</li> <li>12. Fluid and electrolyte replacement therapy, and blood transfusion.</li> <li>13. Emergency procedures like, securing airway (intubation), intravenous access (IV canula/ Venesection/ Central line), Basic and advanced life support.</li> <li>14. Clinical and laboratory monitoring of patients for progression of disease, response to therapy and adverse effects of therapy.</li> <li>15. Common dermatosurgical, laser and cosmetic dermatological procedures.</li> </ol> <p><b>C.Human values, Ethical practice and Communication skills (Affective domain)</b></p> <ol style="list-style-type: none"> <li>1. Delivery of health care irrespective of socio-economic status, race, religion or caste of the patient</li> <li>2. Practice of ethical principles in all aspects of his/ her profession</li> <li>3. Preservation of professional dignity, honesty and integrity</li> <li>4. To exercise empathy towards patients and their relatives, and behave in front of them appropriately</li> <li>5. Follow high moral and ethical standards while carrying out research on humans or animals</li> <li>6. Develop communication skills to convince the patients and/ or their relatives regarding the prognosis of the disease, available treatment options, and their out come</li> <li>7. Communicate efficiently about a bad news to the patient or family members</li> <li>8. Listen and respond patiently to all the queries of patients regarding the disease and its management</li> </ol>
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14	Post Graduate	Radio-Diagnosis	<ul style="list-style-type: none"> <li>• A resident on completing his/her MD (Radio-diagnosis) should have acquired good basic knowledge in the various sub-specialties of radiology such as Neuro-radiology, GI-radiology, Uro-radiology, Vascular-radiology, Musculoskeletal, Interventional radiology, Emergency radiology, Pediatric radiology and Mammography, and be able to Independently conduct and interpret all routine and special radiological and imaging investigations.</li> <li>• Provide radiological services in acute emergency and trauma including its medico legal aspects. Formulate basic research protocols and carry out research in the field of radiology related clinical problems.</li> <li>• To 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.</li> <li>• To interact with other specialists and super-specialists so that maximum benefit to the patient accrues.</li> <li>• Work as a Senior Resident/consultant in Radiodiagnosis and conduct the teaching programme for undergraduates, postgraduates as well as paramedical and technical personnel.</li> <li>• Organize CME in the specialty utilizing modern methods of teaching and evaluation</li> </ul>
15	Post Graduate	Pediatrics	<p>The objectives of MD Course in Paediatrics are to produce a competent pediatrician who:</p> <ul style="list-style-type: none"> <li>• Recognizes the health needs of infants, children and adolescents and carries out professional obligations in keeping with principles of the National Health Policy and professional ethics.</li> <li>• Has acquired the competencies pertaining to Paediatrics that are required to be practiced in the community and at all levels of health system.</li> <li>• Has acquired skills in effectively communicating with the child, family and the community.</li> <li>• Is aware of contemporary advances and developments in medical sciences as related to child health.</li> <li>• Is oriented to principles of research methodology.</li> <li>• Has acquired skills in educating medical and paramedical professionals.</li> <li>• Is able to recognize mental conditions and collaborate</li> </ul>

			with Psychiatrists/Child Psychologists for the treatment of such patients.
16	Post Graduate	General Surgery	<p><b>Knowledge:</b> A list of objectives related to knowledge and higher cognitive abilities that are expected to be achieved during the course are given. At the end of the training, the candidate must be able and competent to:</p> <ol style="list-style-type: none"> <li>1. Understand and describe etiology, pathophysiology principles of diagnosis and management of common surgical problems including emergencies and apply it in management of patients.</li> <li>2. Understand, describe and practice effectively the indications and methods for fluid and electrolyte replacement therapy including blood transfusion nutrition.</li> <li>3. Demonstrate understanding of basic sciences relevant to general surgery, diagnose and manage and describe common malignancies in the country and their management including prevention.</li> <li>4. Identify social, economic, environmental and emotional determinants in a given case, and take them into account during planning therapeutic measures, advice regarding the operative or non-operative management of the case and to carry out the management effectively.</li> <li>5. Undertake audit, use information technology tools and carry out research, both basic and clinical, with the intent of generating knowledge &amp; spread it through publications and presentations for the benefit of scientific community and general public.</li> <li>6. Recognize &amp; refer conditions outside the competency level to appropriate expertise.</li> <li>7. Attend, update and upgrade professional skills regularly as required by participating in instructional courses, workshops, CMEs, conferences or training programmes.</li> <li>8. Be a good teacher by inculcating teaching methodology and skills so as to teach students, colleagues and support staff.</li> <li>9. Educate the society regarding awareness and preventive aspects of various surgical disorders.</li> <li>10. Use evidence based medicine and effectively &amp; advocate them in decision making.</li> <li>11. Be capable of managing medico-legal aspects of trauma and other surgical conditions.</li> <li>12. Be effective team leaders in secondary health care facilities &amp; team member.</li> <li>13. Be capable of organizing and executing effective treatment in mass casualties</li> </ol> <p><b>Skills:</b></p> <ol style="list-style-type: none"> <li>1. Be a competent clinician to take proper clinical</li> </ol>

			<p>history, examine the patient, perform essential diagnostic procedures and order relevant tests and interpret them to come to a reasonable diagnosis about the surgical conditions.</p> <ol style="list-style-type: none"> <li>2. Be a competent surgeon to perform minor operative procedures and common general surgical operations independently and the major procedures under supervision of a senior surgeon.</li> <li>3. Competent in providing basic and advance life saving support services (BLS &amp; ALS) in emergencies and manage them, manage poly trauma, acute surgical emergencies including abdominal and thoracic emergencies.</li> <li>4. Undertake thorough wound management including various traumatic wounds and burns.</li> <li>5. Provide total care to the patient with complete monitoring before and after surgery until recovery or is rehabilitated.</li> </ol> <p><b>Human Values, Ethical practice and Communication abilities</b></p> <ol style="list-style-type: none"> <li>1. Practice surgery ethically and provide care irrespective of other considerations like caste, creed, religion etc. and social status. Should be sensitive and responsiveness towards patients' age, culture , religion, gender and disability etc.</li> <li>2. Be honest and maintain professional integrity, accountability, compassion and respect in all aspects of patient care.</li> <li>3. Be a good communicator who can explain patients in lay terms the outcome, various options of management and obtain true informed consent.</li> <li>4. Be able to respect patients' autonomy, confidentiality, right for information and decision making.</li> <li>5. Understand the limitations of his knowledge and skills and ask for help from experts and colleagues.</li> <li>6. Follow ethical guidelines during research in animals or human subjects.</li> <li>7. Be a motivated leader to bring about best in his team.</li> <li>8. The student should demonstrate a commitment to excellence and continuous professional development.</li> </ol>
17	Post Graduate	Orthopaedics	<p>At the end of the M.S. Orthopaedics programme, the post graduate student should be able to:</p> <ol style="list-style-type: none"> <li>1. Demonstrate sufficient understanding of the basic sciences relevant to orthopedic speciality through a problem based approach.</li> <li>2. Describe the Principles of injury, its mechanism and mode, its clinical presentation, plan and interpret the appropriate investigations, and institute the management of musculoskeletal injuries.</li> <li>3. Identify and describe the surface anatomy and</li> </ol>

			<p>relationships between the various bones, joints, ligaments, major arteries, veins and nerves of the musculoskeletal system of the spine, upper limb, lower limb and the pelvis, chest, abdomen and head &amp; neck.</p> <ol style="list-style-type: none"> <li>4. Define and describe the pathophysiology of shock (circulatory failure).</li> <li>5. Define and describe the pathophysiology of Respiratory failure</li> <li>6. Describe the principles and stages of bone and soft tissue healing</li> <li>7. Understand and describe the metabolic, nutritional, endocrine, social impacts of trauma and critical illness.</li> <li>8. Enumerate, classify and describe the various bony/soft tissue injuries affecting the axial and appendicular skeletal system in adults and children.</li> <li>9. Describe the principles of internal and external fixation for stabilization of bone and joint injuries.</li> <li>10. Describe the mechanism of homeostasis, fibrinolysis and methods to control haemorrhage</li> <li>11. Describe the physiological coagulation cascade and its abnormalities</li> <li>12. Describe the pharmacokinetics and dynamics of drug metabolism and excretion of analgesics, anti inflammatory drugs, antibiotics, disease modifying agents and chemotherapeutic agents.</li> <li>13. Understanding of biostatistics and research methodology</li> <li>14. Describe the clinical presentation, plan and interpret investigations, institute management and prevention of the following disease conditions       <ol style="list-style-type: none"> <li>a. Nutritional deficiency diseases affecting the bones and joints</li> <li>b. Deposition arthropathies</li> <li>c. Endocrine abnormalities of the musculoskeletal system</li> <li>d. Metabolic abnormalities of the musculoskeletal system</li> <li>e. Congenital anomalies of the musculoskeletal system</li> <li>f. Developmental skeletal disorder of the musculoskeletal system</li> </ol> </li> <li>15. Describe the pathogenesis, clinical features plan and interpret investigations and institute the management in adults and children in       <ol style="list-style-type: none"> <li>a. Tubercular infections of bone and joints (musculoskeletal system)</li> <li>b. Pyogenic infections of musculoskeletal system</li> <li>c. Mycotic infections of musculoskeletal system</li> </ol> </li> </ol> <p>Autoimmune disorders of the musculoskeletal system</p>
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			<ul style="list-style-type: none"> <li>d. Rheumatoid arthritis, Ankylosing spondylitis, seronegative arthropathy</li> <li>e. Osteoarthritis and spondylosis</li> </ul> <p>16. Describe the pathogenesis, clinical presentation, plan and interpret investigations and institute appropriate treatment in the following conditions:</p> <ul style="list-style-type: none"> <li>a. Post polio residual paralysis</li> <li>b. Cerebral palsy</li> <li>c. Muscular dystrophies and myopathies</li> <li>d. Nerve Injuries</li> <li>e. Entrapment neuropathies</li> </ul> <p>17. Identify the diagnosis and describe management of musculoskeletal manifestation of AIDS and HIV infection</p> <p>18. Describe the aetiopathogenesis, identify, plan and interpret investigation and institute the management of osteonecrosis of bones.</p> <p>19. Identify situations requiring rehabilitation services and prescribe suitable orthotic and prosthetic appliances and act as a member of the team providing rehabilitation care</p> <p>20. Identify a problem, prepare a research protocol, conduct a study, record observations, analyse data, interpret the results, discuss and disseminate the findings.</p> <p>21. Identify and manage emergency situation in disorders of musculoskeletal system</p> <p>22. Understanding of the basics of diagnostic imaging in orthopedics like:</p> <ul style="list-style-type: none"> <li>a. Plain x-ray</li> <li>b. Ultrasonography</li> <li>c. Computerised axial tomography</li> <li>d. Magnetic resonance imaging</li> <li>e. PET scan</li> <li>f. Radio Isotope bone scan</li> <li>g. Digital Subtraction Angiography (DSA)</li> <li>h. Dual energy x-ray Absorptiometry</li> <li>i. Arthrography</li> </ul> <p>23. Describe the aetiopathogenesis, clinical presentation, Identification, Plan investigation and institute treatment for oncologic problems of musculoskeletal system both benign and malignant, primary and secondary.</p> <p>24. Understand the basics, principles of biomaterials and orthopaedic metallurgy</p> <p>25. Describe the principles of normal and abnormal gait and understand the biomedical principles of posture and replacement surgeries.</p> <p>26. Describe social, economic, environmental, biological and emotional determinants of health in a given patient with a musculoskeletal problem.</p> <p><b>B. Affective Domain:</b></p>
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1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.
3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

**Attitudes including Communication skills and Professionalism**

**a. Communication skills:**

- Exhibits participation in honest, accurate health related information sharing in a sensitive and suitable manner
- Recognizes that being a good communicator is essential to practice effectively
- Exhibits effective and sensitive listening skills
- Recognises the importance and timing of breaking bad news and knows how to communicate
- Exhibits participation in discussion of emotional issues
- Exhibits leadership in handling complex and advanced communication
- Recognizes the importance of patient confidentiality and the conflict between confidentiality and disclosure
- Able to establish rapport in therapeutic bonding with patients, relatives and other stakeholders through appropriate communication
- Able to obtain comprehensive and relevant history from patients/relatives
- Able to counsel patients on their condition and needs
  - a. **Teamwork:** Seek cooperation. Coordination and communication among treating specialties and paramedical staff
  - b. **Counseling of relatives:** regarding patients condition, seriousness, bereavement and
  - c. counseling for organ donation in case of brain death
  - d. **Leadership:** Trauma prevention, education of the public, paramedical and medical persons.
  - e. **Advocacy:** with the government and other agencies towards cause of trauma care
  - f. **Ethics:** The Code of Medical Ethics as proposed by Medical Council of India will be learnt and observed.

**C. Psychomotor domain:**

			<p><b>I. At the end of the first year of M.S. Orthopaedics programme, the student should be able to:</b></p> <ol style="list-style-type: none"> <li>1. Elicit a clinical history from a patient, do a physical examination, document in a case record, order appropriate investigations and make a clinical diagnosis</li> <li>2. Impart wound care where applicable</li> <li>3. Apply all types of POP casts/slabs, splints and tractions as per need</li> <li>4. Identify shock and provide resuscitation</li> <li>5. Perform aspiration of joints and local infiltration of appropriate drugs</li> <li>6. Perform appropriate wound debridement</li> <li>7. Perform arthrotomy of knee joint</li> <li>8. Perform incision and drainage of abscess</li> <li>9. Perform split thickness skin grafting</li> <li>10. Perform fasciotomes</li> <li>11. Apply external fixators</li> <li>12. Apply skeletal tractions including skull tongs</li> <li>13. Triage a disaster situation and multiple trauma patients in an emergency room</li> <li>14. Perform on bone models, interfragmentary compression screws, external fixation, Tension band wiring and various types of plating.</li> <li>15. Perform closed reduction of common dislocations like shoulder and common fractures like colles fracture, supracondylar fracture.</li> <li>16. Perform on a cadaver standard surgical approaches to the musculo skeletal system</li> </ol> <p><b>II. At the end of the second year of M.S. Orthopaedics course, the student should be able to:</b></p> <ol style="list-style-type: none"> <li>1. Take an informed consent for standard orthopaedic procedures</li> <li>2. Perform closed/open biopsies for lesions of bone, joints and soft tissues</li> <li>3. Perform split thickness skin grafting and local flaps</li> <li>4. Perform on bone models, internal fixation with k-wires, screws, plates. Dynamic hip/condylar screws/nailing.</li> <li>5. Perform sequestrectomy and saucerisation</li> <li>6. Perform arthrotomy of joints like hip/shoulder, ankle, elbow</li> <li>7. Perform repair of open hand injuries including tendon repair</li> <li>8. Perform arthodesis of small joints</li> <li>9. Perform diagnostic arthroscopy on models and patients</li> <li>10. Perform carpal tunnel/tarsal tunnel release</li> <li>11. Apply Ilizarov external fixator</li> </ol>
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			<p>12. Perform soft tissue releases in contractures, tendon lengthening and correction of deformities</p> <p>13. Perform amputations at different levels</p> <p>14. Perform corrective surgeries for CTEV, DDH, perthes/ skeletal dysplasia</p> <p><b>III. At the end of the third year of M.S. Orthopaedics programme, the student should be able to:</b></p> <ol style="list-style-type: none"> <li>1. Assist in the surgical management of polytrauma patient</li> <li>2. Assist in Arthroplasty surgeries of hip, knee, shoulder and the ankle</li> <li>3. Assist in spinal decompressions and spinal stabilizations</li> <li>4. Assist in operative arthroscopy of various joints</li> <li>5. Assist /perform arthrodesis of major joints like hip, knee, shoulder, elbow</li> <li>6. Assist in corrective osteotomies around the hip, pelvis, knee, elbow, finger and toes</li> <li>7. Assist in surgical operations on benign and malignant musculoskeletal tumour including radical excision and custom prosthesis replacement.</li> <li>8. Assist in open reduction and internal fixations of complex fractures of acetabulum, pelvis, Ipsilateral floating knee/elbow injuries, shoulder girdle and hand injuries.</li> <li>9. Assist in spinal deformity corrections</li> <li>10. Independently perform closed/open reduction and internal fixation with DCP, LCP, intrameduallary nailing, Limb reconstruction system.</li> <li>11. Assist in limb lengthening procedures</li> <li>12. Assist in Revision arthroplasty.</li> <li>13. Provide pre and post operative care</li> <li>14. Perform all clinical skills as related to the speciality</li> </ol>
18	Post Graduate	Anesthesiology	<ul style="list-style-type: none"> <li>• He/She 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.</li> <li>• He/She shall have mastered most of the competencies, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.</li> <li>• He/She shall be aware of the contemporary advances and developments in anesthesiology.</li> <li>• He/She shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology:</li> <li>• He/She shall have acquired the basic skills in teaching the medical and paramedical students.</li> <li>• He/She continue to evince keen interest in learning and teaching Anesthesiology whether he is in a teaching institution or is a practicing anesthesiologist.</li> </ul>

19	Post Graduate	Urology	<p>The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The objectives may be considered under the sub headings.</p> <p>1.Knowledge 2.Skills 3.Human values, ethical practice and communication abilities.</p> <p><b>Knowledge:</b></p> <ol style="list-style-type: none"> <li>1. To train doctors in the scientific aspects of the specialty of urology, with competence, care and Compassion thereby delivering the highest standard of urological care to the community.</li> <li>2. To provide the candidate with the current, latest, scientific and evidence based knowledge.</li> <li>3. To empower the trainee in academic and research aspects of urology, to empower the trainee to become an effective teacher and communicator in urology.</li> </ol> <p><b>Skills:</b></p> <ol style="list-style-type: none"> <li>1. To impart the skills to undertake independent clinical practice in the above areas of urology and to provide opportunities to the practice of these skills in a graded manner.</li> <li>2. To include in the candidate an attitude of responsibility, accountability and caring, to empower the candidate with a good and sound foundation of ethical values in the practice of urology and to develop in the candidate the ability to effectively communicate with patients, peers, superiors and the community in the discharge of his/her clinical and research role.</li> </ol> <p><b>Human values, ethical practice and communication abilities:</b></p> <ol style="list-style-type: none"> <li>1. Adopt ethical principles in all aspects of his/her practice; professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.</li> <li>2. Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.</li> <li>3. Apply high moral and ethical standard while carrying out human or animal research.</li> <li>4. Be humble and accept the limitations in these knowledge and skill and to ask for help from colleagues when needed.</li> </ol>
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1	MBBS Phase I	Anatomy	<p><b>Knowledge:</b> At the end of the course student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the normal disposition, functional and cross sectional anatomy of various structures of the body and its clinical relevance</li> <li>2. Identify the microscopic structure of various organs and tissue and comprehend their functions in order to understand the alterations in various disease processes</li> <li>3. Comprehend functional organizations of central nervous system and interpret various signs and Symptoms presented as neurological deficit so that he/she may confidently make a diagnosis.</li> <li>4. Demonstrate basic concepts of development of organs and tissues, explain the effect of teratogens, environmental factors and genetic mutations on critical stages of development</li> </ol> <p><b>Skills:</b> Identify and locate all the structures of the body and mark the topography of the Living anatomy.</p> <ol style="list-style-type: none"> <li>1. Identify the organs and tissues under the microscope.</li> <li>2. Understand the principles of karyotyping and identify the gross congenital anomalies.</li> <li>3. Understand principles of newer imaging techniques and interpretation of CT scan. Sonogram USG etc.</li> <li>4. Understand clinical basis of some common clinical procedures i.e. intramuscular and intravenous Injection, lumbar puncture and kidney biopsy etc.,</li> </ol>
2	MBBS Phase I	Physiology	<ul style="list-style-type: none"> <li>• Learn normal functioning of all organs, systems and their interactions for well coordinated body function.</li> <li>• To assess relative contribution of each organ system to the maintenance of the milieu interior.</li> <li>• Elucidate the Physiological aspects of normal growth and development.</li> <li>• Describe the Physiological response and adaptations to environmental stress.</li> <li>• List Physiological Principles underlying pathogenesis and treatment of disease.</li> <li>• To apply Physiologic knowledge in Research activities.</li> <li>• To initiate to participate in Seminar.</li> </ul>
3	MBBS Phase I	Biochemistry	<p>At the end of the course, the learner shall be able to</p> <ol style="list-style-type: none"> <li>1. Understand, describe and summarize the molecular and functional organization of cells, structure, functional relationship and interrelationships of various biomolecules in health and disease.</li> <li>2. Summarize the basic and clinical aspects of enzymology with emphasis on diagnostic and therapeutic uses of enzymes.</li> <li>3. Understand and describe digestion, assimilation of nutrients, associated disorders like obesity, starvation,</li> </ol>

			<p>malnutrition and malabsorption syndrome.</p> <ol style="list-style-type: none"> <li>4. Understand, describe and integrate the various metabolic pathways and their regulation.</li> <li>5. Describe mechanisms involved in water, electrolyte and acid base balance and its disorders.</li> <li>6. Understand and summarize basic molecular mechanism of organization of genome. Genetic expression and regulation, recombinant DNA technology and genetic engineering and explain the biochemical basis of common inherited disorders in India.</li> <li>7. Summarize the basic aspects of immunology including body defense mechanism.</li> <li>8. Biochemical aspects of carcinogenesis and effects of xenobiotics.</li> <li>9. Basic principles of medical biotechnology and their applications in medicine.</li> <li>10. Continue to learn recent advances in Biochemistry and apply the same in medical practice.</li> <li>11. Identify principles of routine and specialized biochemistry, laboratory investigations and techniques, analysis and interpretation of biochemical laboratory techniques.</li> <li>12. Use basic devices for qualitative and quantitative biochemical investigations.</li> <li>13. Understand different types of biomedical waste, their potential risks and their management.</li> <li>14. Explain the biochemical basis of inherited disorders with their associated sequelae.</li> <li>15. Understand the biochemical basis of environmental health hazards.</li> <li>16. To inculcate good behavioral skills, soft skills and communication skills.</li> </ol> <p><b>Skills:</b> At the end of the course, student shall be able to</p> <ol style="list-style-type: none"> <li>1. Make use of conventional techniques and perform relevant biochemical investigations for clinical screening and diagnosis.</li> <li>2. Analyze and interpret laboratory investigations.</li> <li>3. Demonstrate skills for solving clinical problems and arrive at final diagnosis using laboratory data.</li> </ol>
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4	MBBS Phase II	Microbiology	<p>A MBBS student at the end of the microbiology course will be able to:</p> <p><b>Knowledge:</b></p> <ol style="list-style-type: none"> <li>1. Describe the mechanisms of host parasite relationship.</li> <li>2. Enumerate the normal flora and its importance in health and disease.</li> <li>3. Describe the etiology and pathogenesis of common infectious diseases.</li> <li>4. List the microbes that cause opportunistic infections in humans and describe their pathogenesis.</li> <li>5. Explain the importance of National health programmes for the prevention of communicable diseases.</li> <li>6. Understand the ecology (microbial) of specialized areas like hospital, water, food and prevent the possible spread of infections.</li> </ol> <p><b>Skills:</b></p> <ol style="list-style-type: none"> <li>1. Choose appropriate laboratory investigations required for a clinical diagnosis.</li> <li>2. Sample the right specimen, at the right time, by the right method.</li> <li>3. Analyze and interpret the results of laboratory tests.</li> <li>4. Choose the suitable antimicrobial agent for treatment.</li> <li>5. Apply the principles of immunology in the pathogenesis, diagnosis and prevention of infectious and non-infectious diseases.</li> <li>6. Practice the techniques of asepsis, antisepsis and sterilization in day-to-day procedures and apply universal precautions in laboratory and clinical practice.</li> </ol>
5	MBBS Phase II	Pathology	<p><b>Knowledge:</b></p> <p>A MBBS student at the end of training in Pathology will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the concepts of cell injury and changes produced thereby in different tissues and organs and the body's capacity for healing.</li> <li>2. Understand the normal homeostatic mechanisms, the derangements of these mechanism and the effects on human systems.</li> <li>3. Have a knowledge of common genetic, immunological and geriatric disorders and their resultant effects on the human body</li> <li>4. 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.</li> <li>5. Understand the etiopathogenesis, the pathological effects and the clinico-pathological correlation of common infectious and non-infectious diseases.</li> </ol>

			<p>6. Have an understanding of the common haematological disorders and the investigations necessary to diagnose them and determine their prognosis.</p> <p>7. 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.</p> <p>8. Understand different types of biomedical waste, their potential risks and their management.</p> <p><b>Skills:</b> At the end of the course, the student should be able to:</p> <ol style="list-style-type: none"> <li>1. Describe the rationale and principles of technical procedures of the diagnostic laboratory tests and interpretation of the results.</li> <li>2. Perform the simple bed-side tests on blood, urine and other biological fluid samples.</li> <li>3. Plan for investigations aimed at diagnosis and management of the cases of common disorders in collaboration with clinical departments.</li> <li>4. Understand biochemical/physiological disturbances that occur as a result of disease in collaboration with pre clinical departments.</li> <li>5. Understanding the utility of frozen section, automated hematology cell counter, flow cytometry and molecular diagnostic techniques.</li> </ol>
6	MBBS Phase II	Forensic Medicine	<p><b>Knowledge:</b> At the end of the course, student should be able to:</p> <ol style="list-style-type: none"> <li>1. Identify the basic medico legal aspects of hospital and general practice.</li> <li>2. Define the medico legal responsibilities of a general physician while rendering community service either in a rural primary health centre or an urban health center.</li> <li>3. Be able to identify, examine and prepare report or certificate in medico legal cases/situations in accordance with the law of land.</li> <li>4. Able to perform medico legal postmortem and interpret findings and results of other relevant investigations to logically conclude the cause, manner and time since death.</li> <li>5. Be aware of medical ethics, etiquette, duties, rights, medical negligence and legal responsibilities of the physicians towards patient, profession, society, state and humanity at large.</li> <li>6. Be aware of relevant legal / court procedures applicable to the medico legal / medical practice.</li> </ol> <p><b>Skills:</b></p>

			<ol style="list-style-type: none"> <li>1. Make observations and logical inferences in order to initiate enquiries in criminal; matters and medico legal problems.</li> <li>2. Diagnose and treat common emergencies in poisoning and manage chronic toxicity.</li> <li>3. Make observations and interpret findings at postmortem examination.</li> <li>4. Observe the principles of medical ethics in the practice of his profession.</li> <li>5. Be able to preserve and dispatch specimens in medico legal / postmortem cases and other concerned materials to the appropriate government agencies for necessary examination.</li> </ol>
7	MBBS Phase II	Pharmacology	<p><b>Knowledge:</b> At the end of the course, the student be able to:</p> <ol style="list-style-type: none"> <li>1. Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs.</li> <li>2. List indications, contraindications, interactions and adverse reactions of commonly used drugs.</li> <li>3. Inculcate the use of appropriate drug in a particular disease with considerations to the cost, efficacy and safety for <ul style="list-style-type: none"> <li>I. individual needs</li> <li>II. mass therapy under national health programmes</li> </ul> </li> <li>4. List the drugs of dependence and their management</li> <li>5. Classify environmental and occupational pollutants and state the management issues</li> <li>6. Prescription of drugs in special medical situations such as pregnancy, lactation, infancy and old age.</li> <li>7. Integrate the concept of rational drug therapy in clinical pharmacology.</li> <li>8. State the principles underlying the concept of 'Essential Drugs'</li> <li>9. Evaluate the ethics and modalities involved in the development and introduction of new drugs.</li> </ol> <p><b>Skills:</b> At the end of the course, the student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Prescribe drugs for common ailments</li> <li>2. Recognize adverse reactions and interactions of commonly used drugs</li> <li>3. Observe experiments designed for study of effects of drugs, bioassay and interpretations of the experimental data.</li> <li>4. Scan information on common pharmaceutical preparations and critically evaluate drug formations.</li> </ol>

8	MBBS Phase III Part-I	Community Medicine	<p>At the end of the course, the student should be able to:</p> <ol style="list-style-type: none"> <li>1. Organize elementary epidemiological studies to assess the health problems in the area and prioritize the most important problems and help formulate a plan of action to prevent and control under National Health Programme guidelines.</li> <li>2. Understand the health care delivery system at different levels in India and plan health care service delivery at primary level for vulnerable groups (mother, infants, under five children, adolescents and geriatrics) and during disasters/emergencies.</li> <li>3. Inculcate values like compassion, empathy, honesty, sincerity and integrity to ensure high quality ethical professional practice.</li> <li>4. Work as an effective leader of the health team at the primary health care set-up and maintain liaison with various agencies. (Government, non-government and voluntary organizations) involved in public health.</li> <li>5. Plan and implement health education programmes and promote community participation.</li> </ol> <p><b>Knowledge:</b></p> <p>At the end of the course, the student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Describe different levels of health care delivery system in the country.</li> <li>2. Describe different levels of prevention of diseases at community &amp; individual level.</li> <li>3. Describe the National Health Programmes like maternal and child health programmes, family planning programmes &amp; programmes related to communicable &amp; non communicable diseases.</li> <li>4. List epidemiological methods and their application to treat, control &amp; prevent communicable and non-communicable diseases of public health importance.</li> <li>5. To understand the basic biostatistical methods and their application.</li> <li>6. Describe the demographic indicators of the country.</li> <li>7. Describe the role of individual, family, community &amp; socio cultural milieu in health and diseases.</li> <li>8. Describe the health information systems available in India.</li> <li>9. Enunciate the principles and components of primary health care and the national health policies to achieve the goal of 'Health for All'.</li> <li>10. Understand environmental and occupational hazards and their methods of prevention &amp; control.</li> <li>11. Describe the importance of water and sanitation in human health.</li> <li>12. To understand the principles of health economics, health administration, health education in relation to</li> </ol>
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			<p>community health</p> <p><b>Skills:</b>  At the end of the course, the student should be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the steps of outbreak investigation &amp; apply it to community and individual level by using epidemiological tools.</li> <li>2. Collect, analyse, interpret and present community and hospital based research data.</li> <li>3. 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.</li> <li>4. Diagnose and manage common maternal and child health problems and advise a couple and the community on the family welfare planning methods available in the context of the national priorities.</li> <li>5. Diagnose and manage common nutritional problems at the individual and community level.</li> <li>6. Plan, implement and evaluate a health education programme with skill to use simple audio-visual aids.</li> <li>7. Interact with other members of the health care team and participate in the organization of health care services and implementation of national health programmes.</li> </ol>
9	MBBS Phase III Part-I	Ophthalmology	<p><b>Knowledge:</b>  a. At the end of the course the students have knowledge of</p> <ol style="list-style-type: none"> <li>1. Common problems affecting the eye</li> <li>2. Principles of management of major ophthalmic emergencies</li> <li>3. Main systemic diseases of affecting the eye</li> <li>4. Effects of local and systemic diseases on patient's vision and the necessary action required to minimize the sequelae of such diseases.</li> <li>5. Adverse drug reactions with special reference to ophthalmic manifestations</li> <li>6. Magnitude of blindness in India and its main causes</li> <li>7. National programme for control of blindness and its implementation at various levels</li> <li>8. Eye care education for prevention of eye problems</li> <li>9. Role of primary health centre in organization of eye camps</li> <li>10. Organization of primary health care and the functioning of the ophthalmic assistant.</li> <li>11. Integration of the national programme for control of blindness with the other national health programmes.</li> <li>12. Eye Bank Organization</li> </ol> <p>b. Skills at the end of the course students shall be able to perform are:</p>

			<ol style="list-style-type: none"> <li>1. Elicit history pertinent to general health and ocular status.</li> <li>2. Assist in diagnostic procedure such as visual acuity testing, examination of eye, Schiottz tonometry, staining for corneal pathology confrontation Perimetry, subjective refraction including correction of presbyopia and aphakia, direct ophthalmoscopy and conjunctival smear examination and cover test.</li> <li>3. Diagnose and treat common problems affecting the eye.</li> <li>4. Interpret ophthalmic signs in relation to common systemic disorders 14</li> <li>5. Assist / observe therapeutic procedures such as sub conjunctival injection, corneal conjunctival foreign body removal, carbolic cautery for corneal ulcers, nasolacrimal test syringing and tarsorrhaphy</li> <li>6. Provide first aid in major ophthalmic emergency</li> <li>7. Assist to organize community surveys for visual check up.</li> <li>8. Assist to organize primary eye care service through primary health centres.</li> <li>9. Use effective means of communication with public and individuals to motivate for surgery in cataract and for eye donation</li> <li>10. Establish rapport with his seniors colleagues and para medical workers so as to effectively function as member of the eye care team.</li> </ol>
10	MBBS Phase III Part-I	ENT	<p><b>Objectives:</b> At the end of the course, the student should:</p> <ol style="list-style-type: none"> <li>1. know the common problems related to the subject of ENT</li> <li>2. Be competent to evaluate the symptoms, analyze the findings, diagnose the malady and suggest and implement the treatment modalities to treat the common ENT conditions.</li> <li>3. perform emergency life saving procedures commonly seen in ENT practice</li> <li>4. Be aware of the Program on prevention of deafness and have knowledge of methods for screening for early detection of hearing loss.</li> <li>5. have the attitude, communicative skills, adapt to changing trends in education, learning methods and evolve new diagnostic and therapeutic techniques in the subject of ENT</li> <li>6. Know the rational use of pharmaco-therapeutic agents used in treating ENT diseases and have the knowledge of the common side effects and interactions of commonly used drugs.</li> </ol> <p><b>Knowledge:</b></p>

			<ol style="list-style-type: none"> <li>1. Describe surgical anatomy and physiology of the Ear, Nose and Throat and Head and Neck</li> <li>2. Describe basic pathophysiology of common ear, nose and throat diseases and emergencies.</li> <li>3. Suggest common investigative procedures and their interpretation.</li> <li>4. Describe common infective conditions of ENT and treat them.</li> <li>5. Identify congenital deafness as early as possible.</li> </ol> <p><b>Skills:</b></p> <ol style="list-style-type: none"> <li>1. Examine and diagnose common problems of Ear, Nose and Throat region and manage at first aid level of care.</li> <li>2. Recognize premalignant and malignant cases of head and neck region at an early stage.</li> <li>3. Remove foreign bodies in the ear and nose.</li> <li>4. Perform life saving procedures like tracheostomy.</li> <li>5. Should be familiar with drainage of intraoral and neck abscesses.</li> <li>6. Able to do anterior and posterior nasal packing to control epistaxis.</li> </ol>
11	MBBS Phase III Part - II	OBGY	<p><b>Knowledge:</b> At the end of the course, the student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Outline the anatomy, physiology and pathophysiology of the reproductive system and the common conditions affecting it.</li> <li>2. Know about normal pregnancy, labor, puerperium and manage the problems he/she is likely to encounter therein.</li> <li>3. List the leading causes of maternal and perinatal morbidity and mortality.</li> <li>4. Understand the principles of contraception and various techniques employed, methods of medical termination of pregnancy, sterilization and their complications.</li> <li>5. Identify the use, abuse and side effects of drugs in pregnancy, pre menopausal and post menopausal periods.</li> <li>6. Describe the national programme of maternal and child health and family welfare and their implementation at various levels.</li> <li>7. Identify common gynecological diseases and describe principles of their management.</li> <li>8. State the indications, techniques and complications of surgeries like Caesarean section, laparotomy, abdominal and vaginal hysterectomy, Fothergill's operation and vacuum aspiration for Medical Termination of pregnancy (MTP).</li> </ol> <p><b>Skills:</b></p>

			<p>At the end of the course, the student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Examine a pregnant woman, recognize high risk pregnancy and make appropriate referrals.</li> <li>2. Conduct a normal delivery, recognize complications and provide postnatal care.</li> <li>3. Resuscitate new born and recognize congenital anomalies.</li> <li>4. Advise a couple on the use of various available contraceptive devices and assist in insertion and removal of intra-uterine contraceptive devices.</li> <li>5. Perform pelvic examination, diagnose and manage common gynecological problems including early detection of genital malignancies.</li> <li>6. Make a vaginal cytological smear, wet vaginal smear examination for Trichomonas vaginalis, Moniliasis &amp; pap smear.</li> <li>7. Interpret data of investigations like biochemical, histopathological, radiological, ultrasound etc.</li> </ol>
12	MBBS Phase III Part - II	Medicine	<p><b>Knowledge:</b> At the end of the course, the student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Diagnose common clinical disorders with special reference to infectious diseases, nutritional disorders, tropical and environmental diseases.</li> <li>2. Outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contra-indications.</li> <li>3. Perform diagnostic and investigative procedures and interpret them.</li> <li>4. Provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required.</li> <li>5. Recognize geriatric disorders and their management.</li> </ol> <p><b>Skills:</b> At the end of the course, the student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Develop clinical skills (history taking, clinical examination) to diagnose various common medical disorders and emergencies.</li> <li>2. Refer a patient to secondary and/or tertiary level of health care after having instituted primary care.</li> <li>3. Perform simple routine investigations like haemogram, stool, urine, sputum and biological fluid examinations.</li> <li>4. Assist the common bedside investigative procedures like pleural tap, lumbar puncture, bone marrow aspiration/biopsy and liver biopsy.</li> </ol>
13	MBBS Phase III Part - II	Dermatology	<p>At the end of the course in Dermatology, Venereology and Leprosy, the student should demonstrate the following knowledge and skills:</p>

			<p><b>A.Knowledge:</b></p> <ol style="list-style-type: none"> <li>1. Clinical manifestations and complications of common dermatological conditions and emergencies</li> <li>2. Relevant investigations to confirm the diagnosis of common dermatoses</li> <li>3. Pharmacology of commonly used topical preparations and systemic drugs in Dermatology, Venereology and Leprosy</li> <li>4. Various therapeutic options (both medical and surgical) available for a given disease and selection of appropriate therapy after discussing the same with patients and/or their relatives</li> <li>5. Recognition of need for referral in case of complications developed during the treatment of common dermatoses, or emergencies, or rare diseases</li> </ol> <p><b>B.Skills:</b></p> <ol style="list-style-type: none"> <li>1. Elicitation of relevant and correct clinical history and presenting it in a chronological order</li> <li>2. Complete clinical examination and demonstration of diagnostic clinical signs and/or tests that will help in arriving at the correct diagnosis of common dermatoses and emergencies</li> <li>3. Simple side-lab procedures or tests required to make bedside diagnoses</li> <li>4. Method of application of various topical preparations and compresses used in the treatment of common dermatoses</li> </ol>
14	MBBS Phase III Part - II	Pediatrics	<p><b>Knowledge:</b></p> <ol style="list-style-type: none"> <li>1. At the end of the course students will acquire the Knowledge of normal growth and development during foetal, neonatal, childhood and adolescence periods.</li> <li>2. Knowledge of common pediatric disorders including adolescence and emergencies, in terms of epidemiology, etiopathogenesis, clinical manifestations, diagnosis, rational therapy, rehabilitation, and prevention.</li> <li>3. Knowledge of age related requirements of calories, nutrients, fluids, drugs etc., in health and disease.</li> <li>4. Knowledge of preventive strategies for common infectious disorders, poisoning, accidents, and child abuse.</li> <li>5. Knowledge of national programmes related to child health, including immunization programmes.</li> <li>6. Knowledge of common pediatric procedures.</li> <li>7. Knowledge of management of the common pediatric disorders as per IMNCI, (Government of India or World Health Organization recommendations in force from time to time.)</li> </ol>

			<p><b>Skills:</b> At the end of the course the students shall be able to</p> <ol style="list-style-type: none"> <li>1. Take a detailed pediatric history, conduct an appropriate physical examination of children including neonates, make clinical diagnosis, conduct common bedside investigations, interpret common laboratory investigation results, and institute therapy.</li> <li>2. Know the skills of basic life support and cardio pulmonary resuscitation.</li> <li>3. Distinguish between normal newborn babies and those requiring special care and institute essential newborn care.</li> <li>4. Take anthropometric measurements, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current national programs, perform intraosseus access, start an intravenous line, provide naso-gastric feeding, and insert foleys catheter.</li> <li>5. Would have observed procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural tap including intercostal drainage insertion, ascitic fluid tapping, venesection, and neonatal &amp; pediatric advanced life support.</li> <li>6. Provide appropriate guidance and counseling in breast feeding and complimentary feeding.</li> <li>7. Provide ambulatory care to all sick children, identify indications for specialized/inpatient care and ensure timely referral of those who require hospitalization.</li> <li>8. Be aware and analyze ethical problems that arise during practice and deal with them in an acceptable manner following the code of ethics.</li> </ol>
15	MBBS Phase III Part - II	General Surgery	<p><b>Knowledge:</b> At the end of the course, the student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Should be competent to diagnose and describe management of common surgical diseases including emergencies.</li> <li>2. Understand, describe and apply the knowledge of fluid and electrolyte therapy.</li> <li>3. Describe indications of blood transfusion, apply it and manage complications.</li> <li>4. Understand and describe principles of asepsis, disinfection and sterilization, take up rational drug therapy and appropriate use of antibiotics in surgical conditions.</li> <li>5. Develop basic awareness and detect common malignancies in the country, understand principles of management and prevention.</li> <li>6. Enumerate different types of anesthetic agents, their indications, uses contraindications and side effects.</li> </ol>

			<p><b>Skills:</b>  At the end of the course, the student should be able to:</p> <ol style="list-style-type: none"> <li>1. Examine and diagnose common surgical conditions.</li> <li>2. Plan for various tests and their interpretation.</li> <li>3. Diagnose and manage patients with various types of shock.</li> <li>4. Resuscitate and manage air-way, a critically injured, burns and Patients with cardiorespiratory failure.</li> <li>5. Resuscitate and provide basic care in polytrauma patients and refer them appropriately.</li> <li>6. Diagnose and initiate treatment of acute surgical emergencies and refer appropriately.</li> <li>7. Provide primary care for a patient of burns.</li> <li>8. Management of wounds including tetanus, gas gangrene and prophylaxis.</li> <li>9. Acquire knowledge of basic principles of operative surgery, including per operative procedures and manage patients in post operative period.</li> <li>10. Diagnose neonatal and pediatric surgical emergencies and provide sound primary care before referring the patient to secondary/tertiary Centers</li> <li>11. Identify congenital anomalies and refer them for appropriate management.</li> <li>12. In addition to the skills referred above in items he shall have observed/assisted/performed the following during internship: <ol style="list-style-type: none"> <li>a. Incision and drainage of abscess</li> <li>b. Debridement and suturing of open wounds and management of external hemorrhage</li> <li>c. Venesection/I.V.line insertion</li> <li>d. Excision of small lumps</li> <li>e. Biopsy of surface malignancy</li> <li>f. Catheterization and Nasogastric intubation</li> <li>g. Circumcision</li> <li>h. Vasectomy</li> <li>i. Peritoneal and pleural aspirations</li> <li>j. Diagnostic Proctoscopy</li> <li>k. Hydrocele operation</li> <li>l. Endotracheal intubation</li> <li>m. Tracheostomy and cricothyroidotomy</li> <li>n. Chest tube insertion.</li> </ol> </li> </ol> <p><b>Affector Domain:</b></p> <ol style="list-style-type: none"> <li>1. Understand and follow ethical approach in management of surgical conditions.</li> <li>2. Counsel and guide the patients regarding need, options, advantages and disadvantage of common surgical procedures.</li> <li>3. Develop overall humane approach in management of terminal care for needy patients.</li> </ol>
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			<ol style="list-style-type: none"> <li>4. Co-ordinate and organize needful services at the time of natural disasters and mass casualties.</li> <li>5. Work in tandem with National and State level health care policies.</li> <li>6. Understand and follow medico legal aspects in surgical care.</li> </ol>
16	MBBS Phase III Part - II	Orthopaedics	<p><b>Knowledge:</b> The student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Explain the principles of management of bone injuries and dislocations;</li> <li>2. Apply suitable methods to detect and manage common infections of bones and joints;</li> <li>3. Identify congenital, skeletal anomalies and their referral for appropriate correction or rehabilitation.</li> <li>4. Recognize metabolic bone diseases.</li> <li>5. Explain etiology, pathogenesis, manifestations, and diagnosis of neoplasms affecting bones.</li> <li>6. Recognise shock in polytrauma patients.</li> </ol> <p><b>Skills:</b> At the end of the course, the student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Detect common fractures and sprains and manage uncomplicated fractures of clavicle, Colle's fracture, and phalanges fractures;</li> <li>2. Use techniques of splinting, plaster, immobilization;</li> <li>3. Manage common bone infections;</li> <li>4. Advise aspects of rehabilitation for polio, cerebral palsy and amputations.</li> </ol>
17	MBBS Phase III Part - II	Anesthesiology	<p>The undergraduate shall be able to</p> <ol style="list-style-type: none"> <li>1. Enumerate different local anaesthetic agents, general anesthetic agents, muscle relaxants, sedatives and analgesics.</li> <li>2. They shall also understand the indications, mode of administration, contraindications, and side effects of the agents mentioned above.</li> <li>3. They shall be trained in CPBR on manikins.</li> </ol> <p><b>Must know:</b></p> <ol style="list-style-type: none"> <li>1. Preanaesthetic check up and medications.</li> <li>2. Venepuncture set up and IV drip.</li> <li>3. Laryngoscopy, Endotracheal intubation.</li> <li>4. Simple general anaesthetic procedures/Regional Anesthesia.</li> <li>5. Monitoring of patients during postoperative period.</li> <li>6. Local anaesthetic agents and simple blocks.</li> <li>7. Maintenance of anaesthetic record.</li> <li>8. Recognition and treatment of complications in the post operative period.</li> <li>9. Usage of life support system.</li> <li>10. To perform CPR on Mannequin.</li> </ol>

			<p><b>Desirable To Know:</b></p> <ol style="list-style-type: none"> <li>1. Recognition and management of problems associated in emergency situations.</li> <li>2. Crystalloids &amp; Colloids</li> <li>3. Blood &amp; Blood component therapy.</li> <li>4. Oxygen transport and various methods of O<sub>2</sub> administration.</li> <li>5. ICU &amp; Introduction to mechanical ventilation.</li> <li>6. Interpretation of ABG.</li> <li>7. Acute pain management.</li> </ol> <p><b>Nice to know:</b></p> <ol style="list-style-type: none"> <li>1. Boyle's Machine.</li> <li>2. History &amp; Modern trends in practice of Anaesthesia.</li> <li>3. Chronic pain management.</li> <li>4. Occupational hazards</li> </ol>
18	MBBS Phase III Part - II	Chest and TB	<p><b>Knowledge:</b> At the end of the course of Tuberculosis and Chest-diseases, the student shall be able to:</p> <ol style="list-style-type: none"> <li>1. demonstrate knowledge of common chest diseases, their clinical manifestations, including emergent situations and of investigative procedures to confirm their diagnosis;</li> <li>2. demonstrate comprehensive knowledge of various modes of therapy used in treatment of respiratory diseases;</li> <li>3. describe the mode of action of commonly used drugs, their doses, side-effects/toxicity, indications and contra-indications and interactions;</li> <li>4. Describe commonly used modes of management including medical and surgical procedures available for treatment of various diseases and to offer a comprehensive plan of management inclusive of National Tuberculosis Control programme.</li> </ol> <p><b>Skills:</b> The student shall be able to:</p> <ol style="list-style-type: none"> <li>1. interview the patient, elicit relevant and correct information and describe the history in chronological order;</li> <li>2. conduct clinical examination, elicit and interpret clinical findings and diagnose common respiratory disorders and emergencies;</li> <li>3. perform simple, routine investigative and office procedures required for making the bed side diagnosis, especially sputum collection and examination for etiologic organisms especially acid fast bacilli (AFB), interpretation of the chest x-ray and respiratory function tests;</li> </ol>

			<ol style="list-style-type: none"> <li>4. interpret and manage various blood gases and pH abnormalities in various respiratory diseases;</li> <li>5. manage common diseases recognizing need for referral for specialized care, in case of inappropriateness of therapeutic response;</li> <li>6. Assist in the performance of common procedures, like laryngoscopic examination, pleural aspiration, respiratory physiotherapy, laryngeal intubation and pneumo-thoracic drainage aspiration.</li> </ol>
19	MBBS Phase III Part - II	Psychiatry	<p><b>Knowledge:</b> At the end of the course, the student shall be able to:</p> <ol style="list-style-type: none"> <li>1. Comprehend nature and development of different types of normal human behavior like learning, memory, motivation, personality and intelligence;</li> <li>2. Recognize difference between normal and abnormal behavior,</li> <li>3. Classify psychiatric disorders;</li> <li>4. recognize clinical manifestations of the following common syndromes and plan their appropriate management; organic psychosis, functional psychosis, schizophrenia, affective disorders, neurotic disorders, personality disorders, psycho-physiological disorders, drug and alcohol dependence, psychiatric disorders of childhood and adolescence;</li> <li>5. Describe rational use of different modes of therapy in psychiatric disorders.</li> </ol> <p><b>Skills:</b> The student shall be able to</p> <ol style="list-style-type: none"> <li>1. Interview the patient and understand different methods of communication in patient doctor relationship.</li> <li>2. Elicit detailed psychiatric case history and conduct clinical examination for assessment of mental status;</li> <li>3. Define, elicit and interpret psycho-pathological symptoms and signs;</li> <li>4. Diagnose and manage common psychiatric disorders;</li> <li>5. Identify and manage psychological reactions and psychiatric disorders in medical and surgical patients in clinical practice and in community setting.</li> </ol>
Sl. No.	Name of the Program	Name of the Course	Course Outcome
01	Fellowship in Micro Ear Surgery	Micro Ear Surgery	<p>After the completion of the course, candidate should be able</p> <ol style="list-style-type: none"> <li>1. To evaluate ear diseases, interact with radiologist and other service departments.</li> <li>2. To operate cases independently</li> <li>3. To demonstrate cadaver temporal bone dissection for new aspirants of the course/others</li> </ol>

02	Fellowship in Endoscopic Sinus Surgery	Endoscopic Sinus Surgery	<p>At the end of the course, the candidate should be able</p> <ol style="list-style-type: none"> <li>1. To evaluate nose and paranasal sinus disease and interact with radiologist</li> <li>2. To operate cases independently</li> <li>3. To demonstrate cadaveric endoscopic sinus surgery dissection for new aspirants of the course/others</li> </ol>
03	Fellowship In Minimal Access Surgery	Minimal Access Surgery	<p>Gaining laparoscopic skills is very important. Skill in conventional surgical procedure does not necessarily confer skills in Laparoscopic surgery. The course is aimed at bridging this gap and is formulated with the following objectives in mind.</p> <p><b>Knowledge:</b></p> <ol style="list-style-type: none"> <li>1. To learn the principles of Laparoscopic surgery.</li> <li>2. To learn the indications, contra-indications and limitations of MIAS and various procedures.</li> <li>3. Anesthesia in laparoscopic surgery.</li> <li>4. Learning about prosthetic meshes and fixation devices.</li> </ol> <p><b>Knowledge &amp; Skills:</b></p> <ol style="list-style-type: none"> <li>1. To learn about specialized Laparoscopic equipments and instrumentation.</li> <li>2. Sterilization and maintenance of instruments and video equipments.</li> <li>3. Trouble shooting in MIAS.</li> <li>4. Electro surgery and other newer energy sources.</li> <li>5. To learn about tissue morcellators and organ retrieval systems.</li> <li>6. To known about the complications and its managements in MIAS.</li> </ol> <p><b>Skills:</b></p> <ol style="list-style-type: none"> <li>1. To master the tactile sensation, altered hand and eye co-ordination due to the length and design of instruments and the absence of three dimensional depth perception due to two dimensional representation of the three dimensional abdominal cavity.</li> <li>2. To perform abdominal insufflations using Veress needle</li> <li>3. Basic and advanced skills in Endo-knotting and intracorporeal suturing techniques.</li> <li>4. To perform laparoscopic procedures on live animal models in the purposeful, wet laboratory.</li> <li>5. Learn to perform on human patients.</li> <li>6. Documentation, storage data and presentation.</li> </ol>

04	Fellowship Programme Pediatric Dermatology	Pediatric Dermatology	<p>At the end of the fellowship programme the candidate should</p> <ol style="list-style-type: none"> <li>1. Comprehensively manage the dermatological conditions unique to pediatric age group</li> <li>2. Comprehensively manage the pediatric and neonatal dermatological emergencies</li> <li>3. Acquire the knowledge of pharmacology of dermatological drugs used in pregnancy, lactation and children</li> <li>4. Exhibit skills like performance of emergency procedures, fluid and electrolyte balance etc.</li> <li>5. Master communication with referring physicians and learn how to interact with and effectively communicate with other specialty services in both outpatient and inpatient settings.</li> </ol>
05	B.Sc. in Medical Imaging Technology	Medical Imaging Technology	<p>At the end of the course, the candidate should be able</p> <ol style="list-style-type: none"> <li>1. To grow as a new generation radiologic technologist with detailed knowledge of medical imaging</li> <li>2. To acquire opportunity to develop important practical skills in organizing radiological department.</li> <li>3. To pursue carrier in nationally and internationally growing health care industry</li> </ol>
06	MPH Programme	Master of Public Health (MHA)	<ol style="list-style-type: none"> <li>1. To offer a globally competitive and practice based Masters of Public Health (MPH) program to prepare leaders in Public health sciences and practice to address current and future public health challenges.</li> <li>2. To educate and train a person to a skilled level of expertise in the domain area of the growing Community Health Sector.</li> <li>3. To create a cadre of public health professionals and operations of ground-based growing Health Industry needs.</li> <li>4. To enable the students to acquire knowledge of Introduction to Public health, Concepts of and disease, Health development, Health Information System, Health care delivery system</li> </ol>
07	MHA Programme	Master of Hospital Administration (MHA)	<ol style="list-style-type: none"> <li>1. To train students in the field of Administration and Management.</li> <li>2. To provide scientific approach and optimal tools to improve managerial skills.</li> <li>3. To develop strategic thinking and critical awareness of their management style and constantly weigh its appropriateness to deal with various professional groups skilled and unskilled staff, patient and their families and members of the community.</li> </ol>