COURSE OUTCOMES FOR ALL COURSES

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COURSE/SUBJECT OUTCOMES FOR ALL COURSES

Year	Subject	Course Outcome
I MBBS	**Human Anatomy**	**The undergraduate must demonstrate:** 1. Understanding of the gross and microscopic structure and development of human body, 2. Comprehension of the normal regulation and integration of the functions of the organs and systems on basis of the structure and genetic pattern, 3. Understanding of the clinical correlation of the organs and structures involved and interpret the anatomical basis of the disease presentations. **Integration**: The teaching should be aligned and integrated horizontally and vertically in organ systems with clinical correlation that will provide a context for the learner to understand the relationship between structure and function and interpret the anatomical basis of various clinical conditions and procedures.
	Physiology	**The undergraduates must demonstrate:** 1. Understanding of the normal functioning of the organs and organ systems of the body, 2. Comprehension of the normal structure and organization of the organs and systems on basis of the functions, 3. Understanding of age-related physiological changes in the organ functions that reflect normal growth and development, 4. Understand the physiological basis of diseases. **Integration**: The teaching should be aligned and integrated horizontally and vertically in organ systems in order to provide a context in which normal function can be correlated both with structure and with the biological basis, its clinical features, diagnosis and therapy.

	Biochemistry	**The learner must demonstrate an understanding of:** 1. Biochemical and molecular processes involved in health and disease, 2. Importance of nutrition in health and disease, 3. Biochemical basis and rationale of clinical laboratory tests, and demonstrate ability to interpret these in the clinical context. **Integration**: The teaching/learning programme should be integrated horizontally and vertically, as much as possible, to enable learners to make clinical correlations and to acquire an understanding of the cellular and molecular basis of health and disease.
	Community Medicine (Phase I)	**The undergraduate must demonstrate:** 1. Understanding of the concept of health and disease, 2. Understanding of demography, population dynamics and disease burden in National and global context, 3. Comprehension of principles of health economics and hospital management, 4. Understanding of interventions to promote health and prevent diseases as envisioned in National and State Health Programmes. **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to allow the learner to understand the impact of environment, society and national health priorities as they relate to the promotion of health and prevention and cure of disease.
II MBBS	**Pathology**	**The undergraduate must demonstrate:** 1. Comprehension of the causes, evolution and mechanisms of diseases, 2. Knowledge of alterations in gross and cellular morphology of organs in disease states, 3. Ability to correlate the natural history, structural and functional changes with the clinical manifestations of diseases, their diagnosis and therapy, **Integration**: The teaching should be aligned and integrated horizontally and vertically in organ systems recognizing deviations from normal structure and function and clinically correlated so as to provide an overall understanding of the etiology, mechanisms, laboratory diagnosis, and management of diseases.

	Microbiology	**The undergraduate learner demonstrates:** 1. Understanding of role of microbial agents in health and disease, 2. Understanding of the immunological mechanisms in health and disease, 3. Ability to correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents, 4. Knowledge of the principles and application of infection control measures, 5. An understanding of the basis of choice of laboratory diagnostic tests and their interpretation, antimicrobial therapy, control and prevention of infectious diseases. **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems with emphasis on host-microbe-environment interactions and their alterations in disease and clinical correlations so as to provide an overall understanding of the etiological agents, their laboratory diagnosis and prevention.
	Pharmacology	**The undergraduate must demonstrate:** 1. Knowledge about essential and commonly used drugs and an understanding of the pharmacologic basis of therapeutics, 2. Ability to select and prescribe medicines based on clinical condition and the pharmacologic properties, efficacy, safety, suitability and cost of medicines for common clinical conditions of national importance, 3. Knowledge of pharmacovigilance, essential medicine concept and sources of drug information and industry-doctor relationship, 4. Ability to counsel patients regarding appropriate use of prescribed drug and drug delivery systems. **Integration**: The teaching should be aligned and integrated horizontally and vertically in organ systems recognizing the interaction between drug, host and disease in order to provide an overall understanding of the context of therapy.
	Forensic Medicine and Toxicology	**The learner must demonstrate:** 1. Understanding of medico-legal responsibilities of physicians in primary and secondary care settings, 2. Understanding of the rational approach to the investigation of crime, based on scientific and legal principles, 3. Ability to manage medical and legal issues in cases of poisoning / overdose, 4. Understanding the medico-legal framework of medical practice and medical negligence, 5. Understanding of codes of conduct and medical ethics. **Integration**: The teaching should be aligned and integrated horizontally and vertically recognizing the importance of medico-legal, ethical and toxicological issues as they relate to the practice of medicine.

III MBBS (PART-I)	**Community Medicine (Phase III)**	**The learner must demonstrate:** 1. Understanding of physical, social, psychological, economic and environmental determinants of health and disease, 2. Ability to recognize and manage common health problems including physical, emotional and social aspects at individual family and community level in the context of National Health Programmes, 3. Ability to Implement and monitor National Health Programmes in the primary care setting, 4. Knowledge of maternal and child wellness as they apply to national health care priorities and programmes, 5. Ability to recognize, investigates, report, plan and manage community health problems including malnutrition and emergencies. **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to allow the learner to understand the impact of environment, society and national health priorities as they relate to the promotion of health and prevention and cure of disease.
	Ophthalmology	**The student must demonstrate**: 1.Knowledge of common eye problems in the community 2.Recognize, diagnose and manage common eye problems and identify indications for referral, 3.Ability to recognize visual impairment and blindness in the community and implement National programmes as applicable in the primary care setting. **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of ophthalmologic problems, their management and correlation with function, rehabilitation and quality of life.
	Otorhinolaryngology(ENT)	**The learner must demonstrate:** 1. Knowledge of the common Otorhinolaryngological (ENT) emergencies and problems, 2. Ability to recognize, diagnose and manage common ENT emergencies and problems in primary care setting, 3. Ability to perform simple ENT procedures as applicable in a primary care setting, 4. Ability to recognize hearing impairment and refer to the appropriate hearing impairment rehabilitation programme. **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to allow the learner to understand the structural basis of ENT problems, their management and correlation with function, rehabilitation and quality of life.

III MBBS (PART-II)	**General Medicine**	**The student must demonstrate ability to do the following in relation to common medical problems of the adult in the community:** 1. Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management, 2. Competently interview and examine an adult patient and make a clinical diagnosis, 3. Appropriately order and interpret laboratory tests, 4. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures, 5. Follow up of patients with medical problems and refer whenever required, 6. Communicate effectively, educate and counsel the patient and family, 7. Manage common medical emergencies and refer when required, 8. Independently perform common medical procedures safely and understand patient safety issues. **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to provide sound biologic basis and incorporating the principles of general medicine into a holistic and comprehensive approach to the care of the patient.
	General Surgery	**The student must demonstrate:** 1. Understanding of the structural and functional basis, principles of diagnosis and management of common surgical problems in adults and children, 2. Ability to choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and blood products based on the clinical condition, 3. Ability to apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in surgical practice, 4. Knowledge of common malignancies in India and their prevention, early detection and therapy, 5. Ability to perform common diagnostic and surgical procedures at the primary care level, 6. Ability to recognize, resuscitate, stabilize and provide Basic & Advanced Life Support to patients following trauma, 7. Ability to administer informed consent and counsel patient prior to surgical procedures, 8. Commitment to advancement of quality and patient safety in surgical practice. **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to provide a sound biologic basis and a holistic approach to the care of the surgical patient.

	Orthopaedics (including Trauma)	**The student must demonstrate:** 1. Ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first contact care prior to appropriate referral, 2. Knowledge of the medico-legal aspects of trauma, 3. Ability to recognize and manage common infections of bone and joints in the primary care setting, 4. Recognize common congenital, metabolic, neoplastic, degenerative and inflammatory bone diseases and refer appropriately, 5. Ability to perform simple orthopaedic techniques as applicable to a primary care setting, 6. Ability to recommend rehabilitative services for common orthopaedic problems across all ages. **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of orthopaedic problems, their management and correlation with function, rehabilitation and quality of life.
	Obstetrics and Gynaecology:	**Obstetrics: The student must demonstrate ability to:** 1. Provide peri-conceptional counselling and antenatal care, 2. Identify high-risk pregnancies and refer appropriately, 3. Conduct normal deliveries, using safe delivery practices in the primary and secondary care settings, 4. Prescribe drugs safely and appropriately in pregnancy and lactation, 5. Diagnose complications of labor, institute primary care and refer in a timely manner, 6. Perform early neonatal resuscitation, 7. Provide postnatal care, including education in breast-feeding, 8. Counsel and support couples in the correct choice of contraception, 9. Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetric patient, 10. Apply medico-legal principles as they apply to tubectomy, 11. Medical Termination of Pregnancy (MTP), Pre-conception and Prenatal Diagnostic Techniques (PC-PNDT Act) and other related Acts. **Gynaecology: The student must demonstrate ability to:** 1. Elicit a gynaecologic history; perform appropriate physical and pelvic examinations and PAP smear in the primary care setting, 2. Recognize, diagnose and manage common reproductive tract infections in the primary care setting, 3. Recognize and diagnose common genital cancers and refer

		them appropriately. **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for women in their reproductive years and beyond, based on a sound knowledge of structure, functions and disease and their clinical, social, emotional, psychological correlates in the context of national health priorities.
	Paediatrics	**The student must demonstrate:** 1. Ability to assess and promote optimal growth, development and nutrition of children and adolescents and identify deviations from normal, 2. Ability to recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be appropriate, 3. Ability to perform procedures as indicated for children of all ages in the primary care setting, 4. Ability to recognize children with special needs and refer appropriately, 5. Ability to promote health and prevent diseases in children, 6. Ability to participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy, 7. Ability to communicate appropriately and effectively. **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for neonates, infants, children and adolescents based on a sound knowledge of growth, development, disease and their clinical, social, emotional, psychological correlates in the context of national health priorities.
	Dermatology, Venereology & Leprosy	**The undergraduate student must demonstrate**: 1. Understanding of the principles of diagnosis of diseases of the skin, hair, nail and mucosa, 2. Ability to recognize, diagnose, order appropriate investigations and treat common diseases of the skin including leprosy in the primary care setting and refer as appropriate, 3. A syndromic approach to the recognition, diagnosis, prevention, counseling, testing and management of common sexually transmitted diseases including HIV based on national health priorities, 4. Ability to recognize and treat emergencies including drug reactions and refer as appropriate.

		Integration: The teaching should be aligned and integrated horizontally and vertically in order to emphasize the biologic basis of diseases of the skin, sexually transmitted diseases and leprosy and to provide an understanding that skin diseases may be a manifestation of systemic disease.
	Psychiatry	**The student must demonstrate:** 1. Ability to promote mental health and mental hygiene, 2. Knowledge of etiology (bio-psycho-social-environmental interactions), clinical features, diagnosis and management of common psychiatric disorders across all ages, 3. Ability to recognize and manage common psychological and psychiatric disorders in a primary care setting, institute preliminary treatment in disorders difficult to manage, and refer appropriately, 4. Ability to recognize alcohol/ substance abuse disorders and refer them to appropriate centers, 5. Ability to assess risk for suicide and refer appropriately, 6. Ability to recognize temperamental difficulties and personality disorders, 7. Assess mental disability and rehabilitate appropriately, 8. Understanding of National and State programmes that address mental health and welfare of patients and community. **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand bio-psycho-social-environmental interactions that lead to diseases/disorders for preventive, promotive, curative, rehabilitative services and medico-legal implications in the care of patients both in family and community.
	Respiratory Medicine	**The student must demonstrate**: 1.Knowledge of common chest diseases, their clinical manifestations, diagnosis and management, 2.Ability to recognize, diagnose and manage pulmonary tuberculosis as contemplated in National Tuberculosis Control programme, 3.Ability to manage common respiratory emergencies in primary care setting and refer appropriately. • Integration: The teaching should be aligned and integrated horizontally and vertically in order to allow the student to recognize diagnose and treat TB in the context of the society, national health priorities, drug resistance and co-morbid conditions like HIV.

	Radio-diagnosis	**The student must demonstrate:** 1. Understanding of indications for various radiological investigations in common clinical practice, 2. Awareness of the ill effects of radiation and various radiation protective measures to be employed, 3. Ability to identify abnormalities in common radiological investigations. • **Integration**: Horizontal and vertical integration to understand the fundamental principles of radiologic imaging, anatomic correlation and their application in diagnosis and therapy
	Anaesthesiology	**The student must demonstrate ability to:** 1. Describe and discuss the pre-operative evaluation, assessing fitness for surgery and the modifications in medications in relation to anaesthesia / surgery, 2. Describe and discuss the roles of Anaesthesiologist as a peri-operative physician including pre-medication, endotracheal intubation, general anaesthesia and recovery (including variations in recovery from anaesthesia and anaesthetic complications), 3. Describe and discuss the management of acute and chronic pain, including labour analgesia, 4. Demonstrate awareness about the maintenance of airway in children and adults in various situations, 5. Demonstrate the awareness about the indications, selection of cases and execution of cardiopulmonary resuscitation in emergencies and in the intensive care and high dependency units, 6. Choose cases for local / regional anaesthesia and demonstrate the ability to administer the same, 7. Discuss the implications and obtain informed consent for various procedures and to maintain the documents. **Integration**: The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for patients undergoing various surgeries, in patients with pain, in intensive care and in cardio respiratory emergencies. Integration with the preclinical department of Anatomy, para- clinical department of Pharmacology and horizontal integration with any/all surgical specialities is proposed.

MD/MS (PG) Learning Outcomes (generic and programme-specific) and Postgraduate attributes as per the provision of Regulatory bodies and the University

Goal The goal of postgraduate medical education is to produce a competent specialist and / or a medical teacher as
stated in the Post Graduate Medical Education Regulations 2000 and its amendments thereof [May2018]

(i) Who recognizes the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy.
(ii) Who mastered most of the competencies, pertaining to the specialty that is required to be practiced at the secondary and the tertiary levels of the health care delivery system.
(iii) Who is aware of the contemporary advances and developments in the discipline concerned.
(iv) Who acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology, and
(v) Who acquired the basic skills in teaching of the medical and paramedical professionals.

General Objectives At the end of the postgraduate training in the discipline concerned the student is able to:

(i) Recognize the importance of the concerned specialty in the context of the health need of the community and the national priorities in the health sector.
(ii) Practice the specialty concerned ethically and in step with the principles of primary health care.
(iii) Demonstrate sufficient understanding of the basic sciences relevant to the concerned specialty.
(iv) Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive and promotive measures/strategies.
(v) Diagnose and manage majority of the conditions in the specialty concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.
(vi) Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability related to the specialty.
(vii) Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation.

(viii) Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.

(ix) Play the assigned role in the implementation of national health programs, effectively and responsibly.

(x) Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.

(xi) Develop skills as a self-directed learner; recognize continuing educational needs, select and use appropriate learning resources.

(xii) Demonstrate competence in basic concept of research methodology and epidemiology, and be able to critically analyse relevant published research literature.

(xiii) Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.

(xiv) Function as an effective leader of a team engaged in health care, research or training.

Statement of the Competencies: Keeping in view the general objectives of postgraduate training, each discipline shall aim at development of specific competencies, which shall be defined and spelt out in clear terms. Each department shall produce a statement and bring it to the notice of the trainees in the beginning of the program so that he or she can direct the efforts towards the attainment of these competencies.

Components of the PG Curriculum: The major components of the PG curriculum shall be:

- Theoretical knowledge
- Practical/clinical Skills
- Training in writing thesis/research articles
- Attitudes, including communication.
- Training in research methodology, medical ethics & medicolegal aspects
- Teaching skills to the undergraduates, juniors and support teams

Course Duration a. M.D. / M.S. Degree Courses: The course of study period is of 3 years including examinations. (MCI PG REG 2000 10:1)

Training Method- The postgraduate training for degree is of residency pattern. The post graduate is trained with graded responsibilities in the management and treatment of patients entrusted to his/her care. The participation of the students in all facets of educational process is essential. Every candidate must take part in seminars, group

discussions grand rounds, case demonstration, clinics, journal club meetings, CPC and clinical meetings. Every candidate must participate in the teaching and training program of undergraduate students. Training should include involvement in laboratory and experimental work, and research studies. Basic medical sciences students are posted to allied and relevant clinical departments or institutions. Exposure to applied aspects of their learning must be addressed. Similarly, clinical subjects' students are posted to basic medical sciences and allied specialty departments or institutions.

Attendance, Progress and Conduct -A candidate pursuing degree course works in the concerned department of the institution for the full period as a full time student. No candidate is permitted to run a clinic/laboratory/nursing home while studying postgraduate course. Each year is taken as a unit for the purpose of calculating attendance. Every student attends symposia, seminars, conferences, journal club meetings, grand rounds, CPC, case presentation, clinics and lectures during each year as prescribed by the department and not absent himself / herself from work without valid reasons. Every Candidate is required to attend a minimum of 80% of the training during each academic year of the post graduate course. This includes assignments, assessment of full time responsibilities and participation in all facets of educational process. Leave of any kind is not counted as part of academic term without prejudice to minimum 80% attendance of training period every year. Leave benefits is as per university rules. A post graduate student pursuing degree course in broad specialties, MD, MS required to present one poster presentation, read one paper in national/state conference and to present one research paper which must be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him/her to be eligible to appear at the university degree examinations. (MCI, PG 2000, 13.9) Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University Examinations.

Monitoring Progress of Studies -The learning process of students is monitored through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment done by using checklists that assess various aspects. The **learning out comes** to be assessed include:

Personal Attitudes, Acquisition of Knowledge, Clinical and operative skills, skills of performing necessary tests/experiments and Teaching skills. Students maintain Log books /Work book and record his/her participation in the training programs conducted by the department such as journal clubs , seminars, etc.

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