



NETAJI SUBHAS MEDICAL COLLEGE AND HOSPITAL

(A Unit of Sitwanto Devi Mahila Kalyan Sansthan)
Adityapur, Seraikela Kharsawan, Jharkhand - 832 109

Approved by National Medical Commission, New Delhi

Department of Medical Science under Netaji Subhas University, Jamshedpur

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Ref. No: *PRINCIPAL/ACAD/OI/2025/016(1)*

Date: *20th Dec - 2025*

NETAJI SUBHAS MEDICAL COLLEGE & HOSPITAL

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The period of 4½ years is divided as follows:

i) Phase-I of 12 months including Foundation Course of two weeks and university exams. It shall consist of - Anatomy, Physiology, Biochemistry, Introduction to Community Medicine, Humanities, Attitude, Ethics & Communication (AETCOM) module, family adoption programme through village outreach where-in each student shall adopt minimum of three (03) families and preferably at least five (05) families, simulation-based learning, early clinical exposure, alignment & integration and pandemic module integrated. Phase-Wise Exam Pattern for MBBS

ii) Phase-II of 12 months including university exams. It will consist of Pathology, Pharmacology, Microbiology family visit under Community Medicine, General Surgery, General Medicine, Obstetrics & Gynecology, AETCOM module, Forensic Medicine & Toxicology, alignment & integration and introduction to clinical subjects. Family Adoption Programme through village outreach where-in each student shall continue to follow up and provide necessary services under the supervision. Pandemic module integration & simulation-based learning to be continued with increasing complexity.

The clinical exposure to learners will be in the form of learner-doctor method of clinical training in all phases. The emphasis will be on primary, preventive and comprehensive health care. A part of training during clinical postings shall take place at the primary level of health care. It is desirable to provide learning experiences in secondary health care, wherever possible. This will involve:

- Experience in recognizing and managing common problems seen in outpatient, inpatient and emergency settings,
- Involvement in patient care as a team member,
- Involvement in patient management and performance of basic procedures.



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iii) Phase III - 30 months

a. Phase III Part I (12 months, including University exams)

Forensic Medicine and Toxicology, Community Medicine, Medicine & allied subjects, Ophthalmology, Otorhinolaryngology (ENT), Surgery & allied subjects, Pediatrics, Obstetrics & Gynecology, Radiodiagnosis, Anesthesiology, AETCOM, Pandemic module integration, alignment & integration and Clinical postings. Family Adoption Program through village outreach and simulation- based learning to be continued with increasing complexity.

Electives (1 month) shall be in 2 blocks of 15 days each in Phase III part II. First 15days block starts after annual exam of Phase III MBBS part 1 and 2nd block after the end of 1st elective.

b. Phase 3 Part II (18 months, including University exam)-

Subjects include:

Medicine and allied specialties (General Medicine, Psychiatry, Dermatology, Venereology and Leprosy (DVL) Surgery and allied specialties (General Surgery, Orthopedics, Anesthesiology and Radiodiagnosis), Obstetrics and Gynecology (including Family Welfare), Pediatrics, AETCOM module, Pandemic module integration, alignment & integration and Clinical postings.

III. Distribution of teaching hours phase wise:

a Phase I, phase II and phase III- part 1 teaching hours:

Time allotted 12 months (approximately 52 weeks) out of which time available for teaching- learning: approximately 39 weeks.



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(Excluded- 13 weeks: Preliminary/ University examinations and results: 9 weeks, vacations: 2 weeks, public holidays: 2 weeks)

Time distribution in weeks: 39 weeks x 39 hours = 1521 hours for Teaching- Learning.

b Phase-III Part-II, teaching hours: Time allotted: 18 months (approx. 78 weeks) Time available: Approx. 62 weeks (excluding 16 weeks) (39 hours/ week)

Prelim / University Exam & Results: 10 weeks Vacation: 3 weeks

Public Holidays: 3 weeks

Time distribution in weeks: 62 x 39 hrs= 2418 hrs available for Teaching- learning

University Examinations shall be held as under:

- Phase-I** shall be held at the end of Phase I training (in the 12th month of that training), in the subjects of Anatomy, Physiology and Biochemistry.
- Phase-II** examination shall be held at the end of Phase II training (12th month of that training), in the subjects of Pathology, Microbiology, and Pharmacology
- Phase III Part 1** examination shall be held at the end of Phase III part 1 of training (12th month of that training) in the subjects of Community Medicine, Forensic Medicine & Toxicology, Ophthalmology and Otorhinolaryngology.
- Phase III Part 2** - (Final Professional) examination shall be at the end of 17th / 18th month of that training, in the subjects of General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, and allied subjects.



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Criteria for passing in a subject: A candidate shall obtain a cumulative 50% marks in University conducted examination including theory and practical and not less than 40% separately in Theory and in Practical in order to be declared as passed in that subject. In subjects that have two papers, the learner must secure a minimum 40% marks in aggregate (both theory papers together).

At the end of each professional year university examination will be conducted. If any student fails to clear the regular university examination, student will appear in supplementary examination.

Supplementary examinations and declaration of results shall be processed by universities within 6-8 weeks from the date of declaration of the results of the main examination for every professional year, so that the candidates, who pass, can join the main batch for progression. If the student fails in the supplementary examination in any phase of MBBS, the student goes to the junior batch for teaching learning as well as for university examinations. There shall be no supplementary batches

Phase wise details are:

- A candidate, who fails in the Phase-I examination, shall not be allowed to join the Phase-II until the candidate passes all subjects of Phase-I examination.
- A candidate who fails in the Phase-II examination, shall be allowed to join the Phase-III Part I training, however candidate shall not be allowed to appear for the university examination unless the candidate has passed Phase-II university examination and completed eligibility requirement for Phase-III Part I university examinations.
- A candidate who fails in the Phase-III Part I examination shall be allowed to join Phase-III part II training, however candidate shall not be allowed to appear for the university examination unless the candidate has passed Phase-III Part-I university examination and completed eligibility requirement for Phase-III Part II university examinations.



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Appointment of Examiners:

- (1) Person appointed as an examiner in the particular subject must have at least three years of total teaching experience as Assistant Professor after obtaining postgraduate degree following MBBS, in the concerned subject in a college affiliated to a recognized medical college (by UGMEB of NMC).
- (2) For Practical /Clinical examinations, there shall be at least four examiners for every learner, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner shall act as the Chairman and coordinator of the whole examination program so that uniformity in the matter of assessment of candidates are maintained.
- (3) External examiners may be from outside the college/ university/ state.
- (4) There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall mandatorily moderate the theory question paper(s).
- (5) All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.
- (6) All theory paper assessment should be done as a central assessment program (CAP) of the concerned university.
- (7) Internal examiners shall be appointed from the same institution for unitary examination in the same institution.
- (8) The Examiners for General Surgery and allied subjects shall be from General Surgery and 25% from orthopedics. There shall be one orthopedics examiner out of four examiners



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(either internal or external).

(9) There shall be no grace marks to be considered for passing in an examination.

New teaching /learning elements as per CBME Curriculum

1) Foundation Course (2 weeks at the beginning of the course)

Institutions shall develop learning modules and identify the appropriate resource persons for their delivery. The time committed for the Foundation Course may not be used for any other curricular activity. The Foundation Course shall have a minimum of 75% attendance of all students mandatorily. This will be certified by the Principal/Dean of the college.

The Foundation Course shall be organized by the Coordinator appointed by the Principal of the college and shall be under supervision of the Heads of MBBS phase 1 departments.

2) Early Clinical Exposure

Objectives: The objectives of early clinical exposure of the first-year medical learners are to enable the learner to:

- Recognize the relevance of sciences basic to diagnosis, patient care and management,
- Provide a context that will enhance learning of sciences basic to clinical reasoning,
- Relate to experience of patients as a motivation to learn,
- Recognize attitude, ethics and professionalism as integral to doctor- Patient relationship,
- Understand the socio-cultural context of disease through the study of humanities.



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- Phase I subject correlation: i.e. apply and correlate principles of phase I subjects as they relate to patient care (this shall be part of integrated modules as well as in routine teaching wherever relevant).
- Clinical skills: to include basic skills in interviewing patients, doctor- patient communication, ethics and professionalism, critical thinking and analysis and self-learning (this training shall be imparted in the time allotted for early clinical exposure).

3) Attitude, Ethics and Communication Module (AETCOM)

This will be a longitudinal programme spread across the continuum of the MBBS programme including internship

- Application based subject oriented cases may be used as additional resources for this training and real-life case studies for this AETCOM training. Community based case studies must be used in communication aspects of health education, informed consent and counseling in addition to clinical case studies. 75% attendance in AETCOM Module is mandatory for eligibility to appear for exams.

Alignment and Integration:

The purpose of horizontal integration (within a phase) is to remove redundancy and provide interconnectedness. Suggested formats for alignment in phase 1 & 2 are given in annexures. Phase 3 part 1 and 2 can be aligned accordingly as needed.

Integration must be horizontal (i.e. across disciplines in a given phase of the course) and vertical (across different phases of the course). Teaching/learning occurs in each phase through study of organ systems or disease blocks in order to integrate the learning process. Clinical linker cases must be used to integrate and link learning across subjects.



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The six integrated modules to be used across 4 years $\frac{1}{2}$ are **anemia, ischemic heart disease, diabetes mellitus, tuberculosis, hypertension and thyroid.**

Learner-doctor method of clinical training (Clinical Clerkship)

- The first clinical posting in Phase II shall orient learners to the patient, their roles and the specialty.
- Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
- Follow the patient's progress throughout the hospital stay until discharge,
- Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients.

Assessment:

○ A designated faculty member in each unit will coordinate and facilitate the activities of the learner, monitor progress, provide feedback and review the log book/ case record.

○ The log book/ case record prepared by the learner including relevant investigations, treatment and its rationale, hospital course, family and patient discussions, discharge summary etc.

Submission of the log book/ case record is required for eligibility



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Clinical Posting Schedule in Weeks

Subjects	II MBBS	III MBBS Part 1	III MBBS Part 2	Total Weeks
Electives	0	4	0	4
General Medicine	9	4	14	27
General Surgery	7	4	10	21
Obstetrics & Gynecology	7	4	10	21
Pediatrics	4	4	5	13
Community Medicine	4	4	0	8
Orthopedics	2	2	4	8
Otorhinolaryngology	0	3	4	7
Ophthalmology	0	3	4	7
Psychiatry	0	2	4	6
Radio-diagnosis	0	0	2	2
Dermatology	2	2	2	6
Dentistry	1	0	0	1
Anesthesiology	0	0	3	3
Total	33	36	62	134



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CRMI: Compulsory Rotating Medical Internship

Mandatory work in a Netaji Subhas Medical college and Hospital.

Students shall be required to undergo a compulsory rotating medical internship (CRMI) for a minimum period of twelve months after passing the final examination of MBBS.

Internal Medicine – 2 Months

General Surgery – 2 months

Gynecology and Obstetrics – 2 months

Pediatrics – 1 month

Preventive and Social Medicine: 3 months

Child Observation Home

Family Welfare Clinic

Health Education Unit

Primary Health Centers

Urban Health Center

Orthopedics – 15 days

ENT: 15 days

Ophthalmology: 15 days

Elective Posting (Anesthesia/Psychiatry/Derma/Radiology): 15 days each

NB: The compulsory rotating medical internship may be extended appropriately by a reasonable period on recommendation by the College/Medical University. Based on the specific reasons like insufficient period of attendance, any exigency such as disasters or unforeseen circumstances in the country as notified by the Government of India or any competent authority.

Permitted days of leave:

CRMI students shall be permitted a maximum of fifteen days leave with prior permission, during the entire period of internship but the fifteen days cannot be availed during any of the one week or two weeks. Lady Interns may be permitted Maternity Leave according to prevailing rules and regulations



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of the Central or State Government and also sometimes Male interns may be permitted paternity leave for two weeks. Medical Leave shall be included within the fifteen days of normal leave and medical leave beyond this period shall be recommended only by a duly constituted Medical Board.



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First Year MBBS Exam Structure

- Total Marks: 300 per subject (Anatomy, Physiology, Biochemistry).
- Theory Papers: Two papers per subject (Paper I & II), 100 marks each.
- Theory Pattern (80 Marks) + MCQs: 20 one-mark
- Time Duration: 2 hours and 40 minutes per theory paper.

Practical/Viva: 100 marks per subject.

Paper Distribution Topics

Anatomy:

Paper I cover general anatomy, upper limb, lower limb, thorax, and related embryology/histology.

Paper II covers head & neck, brain, abdomen, pelvis, and related embryology/histology.

Physiology:

Paper I typically include General Physiology, Hematology, Cardiovascular, and Respiratory systems.

Paper II includes Nerve-Muscle, Endocrine, Reproductive, and Central Nervous System.

Biochemistry:

Paper I cover cell, biomolecules, enzymology, and acid-base balance.

Paper II covers metabolism, nutrition, molecular biology, and cancer.

Passing Criteria: The "60:40 rule" requires students to pass theory and practical components (including viva voce) separately and requiring 50% aggregate marks plus a 40:60 or 60:40 split in university exams for theory and practical.

Attempts: A maximum of 4 attempts is allowed for the first-year professional examination.

Clinical Focus: Exams now include a significant number of case-based questions, often 30-40% of the paper.

Annexure "Detailed syllabus"



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ANATOMY

GENERAL ANATOMY

Sub divisions of anatomy

Anatomical position and planes

Structure and classification of bones and skeleton

Classification of joints, muscles

Classification of vascular system

Classification of nervous system

Classification of Integumentary system

UPPER LIMB

Bones of upper limb.

Pectoral region

Gross and applied anatomy of breast

Brachial plexus

Axilla : Boundaries and contents – Axillary group of lymph nodes in detail

Back: Muscles of the back

Shoulder: Muscles and movements of shoulder joint

Free upper limb:

Muscles of arm, forearm, hand and their actions.

Cubital fossa- boundaries and contents

Flexor and extensor retinaculum

Applied anatomy of fascial spaces



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Course and branches and applied anatomy of ulnar, median, radial, musculocutaneous and axillary nerve.

Joints, Blood vessels of upper limbs and their applied anatomy

Lymphatic drainage of upper limbs

Gross anatomy, concerned radiology, and surface marking

LOWER LIMB

Bones of lower limb.

Fascia lata

Vascular and lymphatic drainage of Lower limb

Boundaries and contents of femoral triangle Muscles of gluteal region, thigh, leg and foot.

Adductor canal.

Popliteal fossa-boundaries and contents.

Femoral, Obturator, Sciatic, Tibial and common Peroneal nerves- course and branches & their applied anatomy.

Course & branches of femoral artery & profunda femoris artery.

Movements of hip, knee, ankle and subtalar joints.

Arches of the foot.

THORAX

Osteology-Sternum, Ribs and Vertebrae

Boundaries of thoracic inlet, cavity, and outlet.

Muscles of thoracic wall

Thoracic spinal nerves – typical & atypical Anterior



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and Posterior intercostal arteries.

Internal thoracic artery.

Pleural cavity: pleura, lungs, trachea, bronchi, phrenic nerve.

Mediastinum: Boundaries and contents.

Pericardium, heart, and coronary arteries.

Venous drainage and nerve supply of heart.

Thymus

Aorta, pulmonary trunk, superior venacava

Oesophagus, sympathetic chain, thoracic duct and azygos system of veins.

Joints of thorax.

ABDOMEN AND PELVIS

Abdominal wall-Muscles, blood vessels, nerves.

Rectus sheath, Inguinal canal,

Testis-coverings and content

Penis –parts

Thoracolumbar fascia, Lumbar plexus.

Peritoneal cavity, Lesser sac, Greater sac, Mesentery.

Rectovesical, Rectouterine, Uterovesical pouches

Viscera

Liver & Extra hepatic biliary apparatus, Spleen, Stomach, Pancreas. Small intestine, Caecum, Appendix, Colon, Rectum, Anal canal & their clinical significance.



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Kidney, Ureter, Urinary bladder, Urethra, Suprarenals. Portalvein, Inferior venacava, Renalvein.

Abdominal aorta, Coeliac artery, Superior and inferior mesenteric arteries.

Common, External, Internal iliac arteries.

Diaphragm: Attachments, Openings, Nerve supply and action.

Pelvic muscles and their actions.

Prostate, Seminal vesicle, Vasdeferens, Ejaculatory duct.

Ovary, Uterine tube, Uterus, Vagina.

Sacral plexus, Superficial, Deep perineal pouches. Ischioanal fossa.

HEAD AND NECK

Skull and individual skull bones, foetal skull Layers of scalp and its clinical importance.

Muscles of facial expression

Facial artery, vein, nerve & surgical importance of deep facial vein.

Boundaries and contents of posterior triangle.

Suboccipital triangle.

Cranial cavities and their foramina

Pituitary gland

Meninges & Dural venous sinuses.

Extraocular muscles and their actions.

Deep cervical fascia

Boundaries and contents of Anterior triangle. (carotid, digastric, muscular and submental)



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Parotid gland, submandibular gland & sublingual gland and their ducts.

Boundaries and content of temporal and infra temporal fossa.

Temporomandibular joint.

Thyroid and para thyroid, tonsil and adenoid. Common carotid, external and internal carotid arteries Subclavian artery, vagus, spinal accessory nerves.

External, Internal & Anterior jugular veins
& Muscles of soft palate and pharynx

Nasal septum, cavity, lateral wall, paranasal sinuses.

Cartilages and ligaments of larynx.

Intrinsic and Extrinsic muscles of tongue & Larynx External, middle, internal ear, mastoid antrum, auditory tube.

Parts and layers of eye ball.

Pre-vertebral muscles.

Atlanto occipital, Atlanto axial joints and their movements.

Lymphatic drainage of Head and Neck

NERVOUS SYSTEM

Surfaces, Borders, sulci and gyri of cerebrum

White matters of Cerebrum

Lateral, Third, Fourth ventricles of brain.

Circulation of Cerebro spinal fluid, Blood brain barrier Basal nuclei and its components.

Brain stem- Medulla oblongata, pons, Midbrain Cerebellum.



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Cranial nerves.

Vertebral canal & its contents

Coverings and blood supply of brain and spinal cord.

Thalamus, Hypothalamus, Limbic system and Pineal gland

GENETICS:

Chromosomes- Denvers classification

Karyotyping

Chromosomal aberrations.

Prenatal diagnosis and Genetic counselling.

HISTOLOGY

General

The Cell and Microscope

Epithelium

Connective tissue including cartilage and bone

Muscle

Nervous tissue : Peripheral nerve, optic nerve, spinal ganglion, sympathetic ganglion,

Blood vessels

Lymphoid tissue

Skin

Glands and Salivary glands (serous, mucous and mixed gland)



M. Subhas
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Dr. Anil Kumar
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SYSTEMIC

Tooth, lip, tongue

esophagus, cardio-esophageal junction, stomach Duodenum, jejunum, ileum colon,

vermiform appendix Liver, Pancreas, Gall bladder

Lung, Trachea

Thyroid gland, para thyroid gland, supra renal gland and pituitary gland

Kidney, Ureter, Urinary bladder

Male reproductive system-Testis, epididymis, prostate and seminal vesicle

Ovary, uterus, breast

Placenta and umbilical cord

Spinal cord

Cerebrum

Cerebellum

Eye-Retina, cornea, sclero –corneal junction

EMBRYOLOGY General

Cell Division

Spermatogenesis & Oogenesis ovarian cycle, Menstrual cycle Fertilization & I week of development

2nd week of development

3rd week of development

Embryonic period

Placenta

Twin, Prenatal diagnosis, Teratology



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Systemic

Cardiovascular system

Development of blood vessels and fetal circulation

Digestive system

Development of Peritoneal cavity and anterior abdominal wall

Development of foregut

Development of midgut

Development of hindgut

Urinary system

Male reproductive system

Female reproductive system embryology

Diaphragm, blood vessels and Adrenal gland

Head and Neck:

Development of face, palate

Development of teeth

Development of eyeball

Pharyngeal arch and pouches

Development of oral cavity and tongue

Development of thyroid and pituitary

CNS development



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Development of skeletal system

Development of muscular system and skin

PHYSIOLOGY

Paper- I

- General Physiology
- Hematology
- Nerve-Muscle Physiology
- Gastro-Intestinal Physiology
- Renal Physiology
- Endocrine Physiology
- Reproductive Physiology

Paper- II

- Cardiovascular physiology
- Respiratory physiology
- Neurophysiology (Central Nervous System and Special Senses)
- Integrated Physiology

General Physiology (PY 1.1-1.9)

Hematology: (PY 2.1 - 2.13)

Nerve & Muscle Physiology: (PY 3.1 - 3.18)

Gastrointestinal Physiology: (PY 4.1 - 4.10)

Renal Physiology: (PY 7.1 - 7.9)

Endocrine Physiology: (PY 8.1 - 8.6)



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Reproductive Physiology: (PY 9.1 - 9.12)

Cardiovascular Physiology: (PY 5.1 - 5.16)

Respiratory Physiology: (PY 6.1-6.10)

Neurophysiology: (PY 10.1 - 10.20)

Integrated Physiology: (PY 11.1 - 11.14)

The following list of practical is minimum and essential. Additional exercises can be included as

Procedures to be performed by the students: a.

Haematology:

1. RBC count
2. WBC Count
3. Differential Leucocyte Count
4. Estimation of haemoglobin
5. Blood grouping
6. Bleeding time
7. Clotting time
8. Calculate RBC indices - MCV, MCH, MCHC.

b. Procedures to be performed on human subjects:

1. Mosso's ergography.
2. Recording of Blood Pressure, pulse rate at rest and effect of posture.
3. Effect of mild and moderate exercise on blood pressure, pulse rate and respiratory rate using Harvard step test.
4. Record and interpret Lead II ECG. Given a normal ECG, determine cardiac axis.
5. Spirometry – Lung volumes and capacities, MVV, Timed vital capacity.
6. Peak Expiratory Flow Rate



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7. Demonstrate Basic Life Support in a simulated environment
8. Visual field by Perimetry
9. Components of history taking and general physical examination
10. Examination of radial pulse
11. Examination of Cardiovascular system
12. Examination of Respiratory system
13. Examination of abdomen
14. Examination of Higher mental functions
15. Examination of Sensory system
16. Examination of Motor system including reflexes.
17. Examination of Cranial Nerves

II. Demonstrations:

I. Haematology:

- a) Erythrocyte sedimentation rate
- b) Haematocrit
- c) Reticulocyte count
- d) Platelet count
- e) Osmotic fragility
2. Record Arterial pulse tracing using Students Physiograph
3. Stethography
4. Tests of cardiovascular autonomic functions*



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III. Interpretation- charts: clinical case histories, graphs, charts, problems

	Topics	Number required to certify as per MCI
PY5.12	Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment	1 each x 3
PY6.9	Demonstrate the correct clinical examination of the respiratory system in a normal volunteer or simulated environment	1
PY 10.11	Demonstrate the correct clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment	1 each (total 5)
PY 10.20	Demonstrate (i) Testing of visual acuity, colour and field of vision and (ii) hearing (iii) Testing for smell and (iv) taste sensation in volunteer / simulated environment	1 each (total 4)



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Early Clinical Exposure:

Clinical visits: 12 hours (Suggested format for assessing participation in ECE sessions which shall be a part of the practical record book)

Planned hospital visits on some topics:

Anemia, Jaundice, Visit to blood bank, Computerized lung function tests, acid peptic disease, endoscopy procedure, dialysis unit, hemiplegia

Basic science correlations: 18 hours

Discussion based on case vignettes, graphs, clinical videos, patient in classroom setting, etc linked to various systems in physiology

BIOCHEMISTRY

Paper – 1

Section A:

- Cell, Cell Membrane, Transport across membrane and associated disorders
- Chemistry and Metabolism of Carbohydrate, Lipids and Proteins
- Bioenergetics and E.T.C
- Haemoglobin and Myoglobin
- Haeme Synthesis & Degradation and Porphyrins

Section B:

1. Enzymes, Clinical Enzymology
2. Vitamins
3. Minerals
4. Water and Electrolyte balance and disorders
5. Plasma Proteins
6. Diabetes



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Paper – II

Section A:

1. Acid-base balance and disorders
2. Immunology
3. Free radicals and anti-oxidants
4. Xenobiotics, Detoxification and Environmental Biochemistry
5. Nutrition

Section B:

1. Hormones
2. Function tests: Liver, Kidney, Thyroid, Gastric, Pancreatic, Adrenal,
3. Nucleotide and Nucleic acids, its metabolism and repair
4. Recombinant DNA technology and Diagnostics
5. Cancer Biochemistry and Tumor Markers.

Biochemistry syllabus-Theory

Basic biochemistry (BI 1.1)

Enzyme (BI2.1- 2.7)

Chemistry and Metabolism of Carbohydrates (BI3.1- 3.10)

Chemistry and Metabolism of lipids (BI4.1- 4.7)

Chemistry and Metabolism Protein (BI5.1- 5.5)

Molecular biology (BI 7.1- 7.7)

Nutrition (BI 8.1- 8.5)

Extracellular Matrix (BI9.1- 9.3)

Oncogenesis and Immunity (BI10.1- 10.5)

Biochemical Laboratory Tests (BI11.1- 11.24)

Metabolism and Homeostasis (BI6.1 – 6.15)

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ACADEMIC PRACTICALS LIST

The following list of practical is minimum and essential. Additional exercises can be included as Procedures to be performed by the students:

1. Color reaction of Carbohydrates
2. Color reactions of Amino Acids
3. Color reactions of Proteins
4. Practical on protein precipitation, fractionation, denaturation
5. Estimation of Plasma Glucose
6. Estimation of Serum Total Protein
7. Estimation of Serum Albumin
8. Estimation of A/G ratio
9. Estimation of Blood urea
10. Estimation of Serum Creatinine
11. Estimation of Serum Uric Acid
12. Urinary Analysis - Normal
13. Urinary Analysis - Abnormal

Demonstrations:

1. Laboratory Instrumentation
2. Principles of Colorimetry and Spectrophotometry
3. Plasma Protein Electrophoresis
4. Estimation of AST, ALT, ALP, Calcium and Phosphorus

Interpretation:

Charts

- 1] Clinical case histories
- 2] OGTT Graphs.



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