



1. Goal

The goal of teaching Microbiology is to provide understanding of the natural history of infectious diseases in order to deal with the etiology, pathogenesis, pathogenicity, laboratory diagnosis, treatment, control and prevention of these infections and infectious diseases.

2. Educational objectives

(a) Knowledge

The student at the end of one and half years should be able to: -

- i. state the etiology, pathogenesis and methods of laboratory diagnosis and apply that knowledge in the diagnosis, treatment, prevention and control of communicable diseases caused by microorganisms.
- ii. understand commensal, opportunistic and pathogenic organisms of human body and describe host parasite relationship.
- iii. know and describe the pathogenesis of diseases caused by microorganisms.
- iv. state the sources and modes of transmission of pathogenic and opportunistic micro-organisms including knowledge of insect vectors & their role in transmission of infectious diseases.
- v. choose appropriate laboratory investigations required for clinical diagnosis.

(b) Skills

- i. Plan and interpret laboratory investigations for diagnosis of infectious diseases and correlate the clinical manifestations with the etiological agent.
- ii. Identify common infectious agents with the help of laboratory procedure, acquire knowledge of antimicrobial agents, use of antimicrobial sensitivity tests to select suitable antimicrobial agents for treatment.
- iii. Perform simple laboratory tests, which help to arrive at rapid diagnosis.
- iv. Be conversant with proper methods of collection, storage & transport of clinical material for microbiological investigations.
- v. Understand the principles of immunology and its application in the diagnosis and prevention of infectious diseases including immunization schedule, acquire knowledge of the scope of immunotherapy and different vaccines available for the prevention of communicable diseases.
- vi. Understand methods of disinfection and sterilization and their application to control and prevent hospital and community acquired infections including universal biosafety precautions and waste disposal.
- vii. Recommend laboratory investigations regarding bacteriological examination of food, water, milk and air.
- viii. The student should be well equipped with the knowledge of prevalent communicable diseases of national importance and of the newer emerging pathogens.

(c) Attitude

- i. The student will be regular, sincere, punctual and courteous and regular in studies.
- ii. The student will follow all the rules laid down by the department and participate in all activities.
- iii. The student will understand the importance of, and practice asepsis, waste segregation and appropriate disposal.
- iv. The student will understand the importance of, and practice the best methods to prevent the development of infection in self and patient. (E.g. hand washing, using aprons for hospitals in hospitals only, regularly washing the aprons, wearing gloves (as and when required / handling specimens etc.).
- v. the student will understand the use of the different antimicrobial agents including antibiotics to use judiciously and prevent misuse, (prescribing attitude).
- vi. the student will understand the significance of vaccinations and will receive appropriate vaccines (e.g. TT, Hepatitis B and any other as per needs).
- vii. the student will wash his/her hands with soap after each practical class.
- viii. the student will leave the area allotted for his practical neat and tidy.
- ix. the student will discard the slides in the appropriate container provided for the same.
- x. the student will report any injury sustained in class, immediately.
- xi. the student will report any breakage occurring during class times immediately.
- xii. the student may give suggestions to improve teacher student association.



1. Goal

The goal of teaching pathology is to provide undergraduate students comprehensive knowledge of the causes and mechanisms of disease, in order to enable them to achieve complete understanding of the natural history and clinical manifestations of the disease.

2. Educational objectives

(a) Knowledge

At the end of one and half years, the student shall be able to

- i. Describe the structure and ultrastructure of a sick cell, the mechanisms of the cell degradation, cell death and repair.
- ii. Correlate structural and functional alterations in the sick cell.
- iii. Explain the Patho physiological processes which governs the maintenance of homeostasis, mechanism of their disturbances and the morphological and clinical manifestation associated with it.
- iv. Describe the mechanisms and patterns of tissue response to injury to appreciate the Pathophysiology of disease processes and their clinical manifestations.
- v. Correlate the gross and microscopic alterations of different organ systems in common diseases to the extent needed to understand disease processes and their clinical significance.
- vi. Develop an understanding of neoplastic change in the body in order to appreciate need for early diagnosis and further management of neoplasia.
- vii. Understand mechanisms of common haematological disorders and develop a logical approach in their diagnosis and management.

(b) Skills

At the end of one and half years, the student shall be able to

- i. Describe the rationale and principles of technical procedures of diagnostic laboratory tests.
- ii. Interpret diagnostic laboratory tests and correlate with clinical and morphological features of diseases.
- iii. Perform simple bedside tests on blood, urine and other biological fluid samples.
- iv. Draw a rational scheme of investigations aimed at diagnosing and managing common disorders.
- v. Recognise morbid anatomical and histopathological changes for the diagnosis of common disorder. Introduction of "Communication Skills, Professionalism & Ethics in Medical Education Modules" in 2 nd Year MBBS Syllabus New Topic in Syllabus of Pathology (A.Y. 2015-16)

(c) Integration

At the end of one and half years, the student shall be able to, integrate the causes and mechanisms of disease most prevalent in India with their natural history for the understanding of their clinical course and management.

3. Total duration of teaching 3 Semesters (III, IV and V)



1. Goal

The broad goal of teaching pharmacology to undergraduate students is to inculcate in them a rational and scientific basis of therapeutics.

2. Educational objectives

(a) Knowledge

At the end of the course, the student shall be able to

- i. Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs
- ii. list the indications, contraindications, interactions and adverse reactions of commonly used drugs
- iii. Indicate the use of appropriate drug in a particular disease with consideration of its cost, efficacy and safety for - individual needs, and mass therapy under national health programmes
- iv describe the pharmacokinetic basis, clinical presentation, diagnosis and management of common poisonings.
- v. Integrate the list the drugs of addiction and recommend the management
- vi. Classify environmental and occupational pollutants and state the management issues
- vii. Explain pharmacological basis of prescribing drugs in special medical situations such as pregnancy, lactation, infancy and old age
- vii Explain the concept of rational drug therapy in clinical pharmacology
- viii State the principles underlying the concept of 'Essential Drugs' ix evaluate the ethics and modalities involved in the development and introduction of new drugs

(b) Skills

At the end of the course, the student shall be able to

- i. Prescribe drugs for common ailments
- ii. Identify adverse reactions and interactions of commonly used drugs
- iii. Interpret the data of experiments designed for the study of effects of drugs and bioassays which are observed during the study
- iv. Scan information on common pharmaceutical preparations and critically evaluate drug formulations
- v. Be well-conversant with the principles of pharmacy and dispense the medications giving proper instructions

(c) Integration

Practical knowledge of rational use of drugs in clinical practice will be acquired through integrated teaching vertically with pre-clinical & clinical subjects and horizontally with other para-clinical subjects.

3. Total duration of para-clinical teaching 3



NKP Salve Institute of Medical Sciences & RC & LMH, Nagpur

Department of Forensic Medicine And Medical Jurisprudence Including Toxicology



Course Outcome/Learning Objectives

1. Goal

The broad goal of teaching undergraduate students Forensic Medicine is to produce a physician who is well informed about Medico-legal responsibility during his/her practice of Medicine. He/She will also be capable of making observations and inferring conclusions by logical deductions to set enquiries on the right track in criminal matters and associated medico-legal problems. He/She acquires knowledge of law in relation to Medical practice, Medical negligence and respect for codes of Medical ethics.

2. Educational objectives

(a) Knowledge

At the end of the course, the student shall be able to

- i. Identify the basic Medico-legal aspects of hospital and general practice
- ii. Define the Medico-legal responsibilities of a general physician while rendering community service either in a rural primary health centre or an urban health centre
- iii. Appreciate the physician's responsibilities in criminal matters and respect for the codes of Medical ethics
- iv. Diagnose, manage and identify also legal aspect of common acute and chronic poisonings
- v. Describe the Medico-legal aspects and findings of post-mortem examination in cases of death due to common unnatural conditions and poisonings
- vi. Detect occupational and environmental poisoning, prevention and epidemiology of common poisoning and their legal aspects particularly pertaining to Workmen's Compensation Act
- vii. Describe the general principles of analytical toxicology

(b) Skills

A comprehensive list of skills and attitude recommended by Medical Council of India Regulation, 1997 desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) Graduate for Forensic Medicine and Toxicology At the end of the course, the student shall be able to

- i. Make observations and logical inferences in order to initiate enquiries in criminal matters and Medico-legal problems
 - a. To be able to carry on proper Medico-legal examination and documentation/Reporting of Injury and Age
 - b. To be able to conduct examination for sexual offences and intoxication
 - c. To be able to preserve relevant ancillary materials for medico - legal examination
 - d. To be able to identify important post-mortem findings in common unnatural deaths
- ii. Diagnose and treat common emergencies in poisoning and chronic toxicity
- iii. Make observations and interpret findings at post-mortem examination
- iv. Observe the principles of medical ethics in the practice of his profession

(c) Integration

Department shall provide an integrated approach towards allied disciplines like Pathology, Radiology, Forensic Sciences, Hospital Administration etc. to impart training regarding Medico-legal responsibilities of physicians at all levels of health care. Integration with relevant disciplines will provide scientific basis of clinical toxicology e.g. Medicine, Pharmacology etc.



(i) Goal

The broad goal of the teaching of undergraduate students in Medicine is to have the knowledge, skills and behavioral attributes to function effectively as the first contact physician.

(ii) OBJECTIVES :

(a) KNOWLEDGE :

At the end of the course, the student shall be able to :

- (1) Diagnose common clinical disorders with special reference to infectious diseases, nutritional disorders, tropical and environmental diseases;
- (2) Outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contra-indications;
- (3) Propose diagnostic and investigative procedures and ability to interpret them;
- (4) Provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required;
- (5) Recognize geriatric disorders and their management.

(iii) SKILLS :

At the end of the course, the student shall be able to :

- (1) Develop clinical skills (history taking, clinical examination and other instruments of examination to diagnose various common medical disorders and emergencies; Introduction of "Communication Skills, Professionalism & Ethics in Medical Education Modules" TOPIC in 2nd & 3rd MBBS Syllabus Introduction of "Palliative Care Medicine" Topic In 3rd MBBS (Part II) in General Medicine Syllabus
- (2) Refer a patient to secondary and/or tertiary level of health care after having instituted primary care;
- (3) Perform simple routine investigations like hemogram, stool, urine, sputum and biological fluid examinations;
- (4) Assist the common bedside investigative procedures like pleural tap, lumbar puncture, bone marrow aspiration/ biopsy and liver biopsy. A course of systematic instruction in the principles and practice of medicine, including medical disease of infancy;
 - a. Lecture - demonstrations, seminars and conferences in clinical medicine during the 3 years shall run concurrently with other clinical subjects.;
 - b. Instructions in comprehensive medical care;
 - c. Instructions in applied anatomy and physiology and pathology throughout the period of clinical studies;
 - d. Instructions in dietetics, nutrition and principles of nursing Medical and in simple ward procedure e.g. should be imparted during clinical concurrently.

iv) Attitude :

- a. The teaching and training in clinical medicine must aim at developing the attitude in students to apply the knowledge & skills he/she acquires for benefit and welfare of the patients.
- b. It is necessary to develop in students a sense of responsibility towards holistic patient care & prognostic outcomes.
- c. Students should develop behavioural skills and humanitarian approach while communicating with patients, as individuals, relatives, society at large & the co- professionals.



NKP Salve Institute of Medical Sciences & RC & LMH, Nagpur
Department of Skin Dermatology / Std / Leprosy
Course Outcome/Learning Objectives



Goals :

The aim of teaching the Under graduate students in Dermatology, S.T.D. and Leprosy is to impart such knowledge and skills that may enable him to diagnose and treat common ailments and to refer rare diseases or complications and unusual manifestations of common diseases to the specialist.

OBJECTIVES :

Knowledge :

At the end of the course of Dermatology, Sexually Transmitted Diseases & Leprosy the student shall be able to :

1. Demonstrate sound knowledge of common diseases, their clinical manifestations including emergent situations and of investigative procedures to confirm their diagnosis.
2. Demonstrate comparative knowledge of various modes of topical therapy.
3. Demonstrate the mode of action of commonly used drugs, their doses, side effects / toxicity, indications and contraindication & interactions.
4. Describe commonly used modes of management including the medical & Surgical procedures available for the treatment of various diseases and to offer a comparative plan of management for a given disorder.

Skills :

The student shall be able to

1. Interview the patient, elicit relevant and correct information and describe the history in a chronological order :
2. Conduct clinical examination, elicit and interpret physical findings and diagnose common disorders and emergencies :
3. Perform simple, routine investigative and laboratory procedures required for making the bedside diagnosis, especially the examination of scrapings for fungus, preparation of slit smears and staining for AFB for leprosy patients and for STD cases :
4. Take a skin biopsy for diagnostic purposes ;
5. Manage common diseases recognizing the need for referral for specialized care, in case of



(i) Goal :

The aim of teaching the undergraduate student in Tuberculosis and Chest Diseases is to impart such knowledge and skills that may enable him/her to diagnose and manage common ailments affecting the chest with the special emphasis on management and prevention of Tuberculosis and especially National Tuberculosis control programme.

(ii) OBJECTIVES :

(a) KNOWLEDGE :

At the end of the course of Tuberculosis and Chest diseases, the student shall be able to:

- 1) Demonstrate sound knowledge of common chest diseases, their clinical manifestations, including emergent situations and of investigative procedures to confirm their diagnosis"
- 2) Demonstrate comprehensive knowledge of various modes of therapy used in treatment of respiratory diseases;
- 3) Describe the mode of action of commonly used drugs, their doses, sideeffects/toxicity, indications and contra-indications and interactions.;
- 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.

(b) SKILLS :

The student shall be able to :

- 1) Interview the patient, elicit relevant and correct information and describe the history in chronological order;
- 2) Conduct clinical examination, elicit and interpret clinical findings and diagnose common respiratory disorders and emergencies;
- 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-rays and respiratory function tests;
- 4) Interpret and manage various blood gases and PH abnormalities in various respiratory diseases.
- 5) Manage common diseases recognizing need for referral for specialized care, in case of inappropriateness of therapeutic response;
- 6) Assist in the performance of common procedures, like laryngoscopic examination, pleural aspiration, respiratory physiotherapy, laryngeal intubation and pneumo-thoracic drainage/aspiration

(a) INTEGRATION:

The broad goal of effective teaching can be obtained through integration with departments of Medicine, Surgery, Microbiology, Pathology, Pharmacology and Preventive and Social Medicine



(i) GOAL :

The aim of teaching of the undergraduate student in Psychiatry is to impart such knowledge and skills that may enable him to diagnose and treat common Psychiatric disorders, handle Psychiatric emergencies and to refer complications/unusual manifestation of common disorders and rare Psychiatric disorders to the specialist.

(ii) OBJECTIVES :

(a) KNOWLEDGE :

At the end of the course, the student shall be able to :

1. Comprehensive nature and development of different aspects of normal human behaviour like learning, memory, motivation, personality and intelligence;
2. Recognize differences between normal and abnormal behaviour;
3. Classify psychiatric disorders;
4. Recognize clinical manifestations of the following common syndromes and plan their appropriate management of organic psychosis, functional psychosis, schizophrenia, affective disorders, neurotic disorders, personality disorders, psychophysiological disorders, drug and alcohol dependence, psychiatric disorders of childhood and adolescence;
5. Describe rational use of different modes of therapy in psychiatric disorders.

(b) SKILLS :

The Student shall be able to :

- 1) interview the patient and understand different methods of communications in patient-doctor relationship;
- 2) Elicit detailed psychiatric case history and conduct clinical examination for assessment of mental status;
- 3) Define, elicit and interpret psycho-pathological symptoms and signs;
- 4) Diagnose and manage common psychiatric disorders;
- 5) Identify and manage psychological reactions and psychiatric disorders in medical and surgical patients in clinical practice and in community setting.

(c) INTEGRATION :

Training in Psychiatry shall prepare the students to deliver preventive, promotive, curative and rehabilitative services for the care of patients both in the family and community and to refer advanced cases for a specialized Psychiatry / Mental Hospital. Training should be integrated with the departments of Medicine, Neuro-Anatomy, Behavioral and Forensic Medicine.



NKP Salve Institute of Medical Sciences & RC & LMH, Nagpur
Department of Paediatrics Including Neonatology
Course Outcome/Learning Objectives



The course includes systematic instructions in growth and development, nutritional needs of a child, immunization schedules and management of common diseases of infancy and childhood including scope for Social Paediatrics and counseling.

(i) GOAL :

The broad goal of the teaching of undergraduate students in Paediatrics is to acquire adequate knowledge and appropriate skills for optimally dealing with major health problems of children to ensure their optimal growth and development.

(ii) OBJECTIVES :

(a) KNOWLEDGE :

At the end of the course, the student shall be able to:

- (1) Describe the normal growth and development during foetal life, neonatal period, childhood and adolescence and outline deviations thereof;
- (2) Describe the common paediatric disorders and emergencies in terms of Epidemiology, aetiopathogenesis, clinical manifestations, diagnosis, rational therapy and rehabilitation;
- (3) Age related requirements of calories, nutrients, fluids, drugs etc, in health and disease;
- (4) Describe preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisonings, accidents and child abuse;
- (5) Outline national Programmes relating to child health including immunization Programmes.

(b) SKILLS :

At the end of the course, the student shall be able to :Academic Notification No. 08/2013 Introduction of “WHO New Growth Charts/SAM/IYCF” Topic In MBBS Syllabus

- (2) Take a detailed paediatric history, conduct an appropriate physical examination of children including neonates, make clinical diagnosis, conduct common bedside investigative procedures, interpret common laboratory investigation results and plan and institute therapy.
- (3) Take anthropometric measurements, resuscitate newborn infants at birth, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current national programmes, perform venesection, start an intravenous saline and provide nasogastric feeding :
- (4) Conduct diagnostic procedures such as a lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural tap and ascitic tap;
- (5) Distinguish between normal newborn babies and those requiring special care and institute early care of all newborn babies including care of preterm and low birth weight babies, provide correct guidance and counseling in breast feeding ;
- (6) Provide ambulatory care to all sick children, identify indications for specialized / inpatient care and ensure timely referral of those who require hospitalization :

(C) INTEGRATION :

The training in paediatrics should prepare the student to deliver preventive, promotive, curative and rehabilitative services for care of children both in the community and at hospital as part of team in an integrated form with other disciplines, e.g. Anatomy, Physiology, Forensic Medicine, Community Medicine and Physical Medicine and Rehabilitation.



NKP Salve Institute of Medical Sciences & RC & LMH, Nagpur
Department of Preventive And Social Medicine /
Community Medicine (PSM)



Course Outcome/Learning Objectives

- A. The teaching of Social & Preventive Medicine shall place throughout the teaching period.
- B. Field experience in rural health is included in pre-clinical as well as during clinical period
- C. During the students attendance at various departments which is now required under medicine and surgery, such as infectious diseases. T.B. Leprosy, V.D. etc. emphasis shall be laid as much on the preventive as on the clinical and Therapeutic aspects of these diseases.
- D. In addition to the teaching undertaken by the department of Social & Preventive Medicine, a joint programme with other departments is essential in order to give the students a comprehensive picture of man, his health and illness.
- E. Stress shall be laid on national programmes, including those of control of communicable diseases and family planning and health education.
- F. An epidemiological units as an integrate part of every hospital in order to achieve a comprehensive study disease by the students should be established.
- G. The objective of the internship shall be clearly defined and that a proper training programme is oriented for this period. Objectives, and the methods by which the internship could be made into a satisfying and fruitful experience. Sharpening and for planning in this phase of education shall be done.
- H. As regards the qualifications of the teachers it is highly important that All teachers in Social and A preventive Medicine should have as far as possible had adequate administrative experience in addition to the teaching experience. They should also be encouraged to acquire skills in clinical subject specially related to community medicine.

I. Practical Skills :

Due stress shall be laid on the students acquiring practical skill in the following procedures.

GOALS :

Community Medicine including Humanities (Preventive and Social Medicine) (Phase I,II and Part 1st of Phase III M.B.B.S.) The broad goal of the teaching of undergraduate students in community medicine is to prepare them to function as community and first level physicians in accordance with the institutional goals. Academic Notification No. 08/2013 Introduction of "WHO New Growth Charts/SAM/IYCF" Topic In MBBS Syllabus

OBJECTIVES :

Knowledge :

At the end of the course the student shall be able Explain the principles of sociology including demographic population dynamics. Identify social factors related to health, disease and disability in the context of urban and rural societies. Appreciate the impact of urbanization on health and disease. Observe and interpret the dynamic of community behaviours. Describe the elements of normal psychology and social psychology. Observe the principles of practice of medicine in hospital and community settings. Describe the health care delivery systems including rehabilitation of the disabled in the country. Describe the National Health Programmes with particular emphasis on maternal and child health programmes, family welfare planning and population control. List the epidemiological methods and techniques. Outline the demographic pattern of the country and appreciate the roles of the individuals, family, community and socio-cultural milieu in health and disease. Describe the health information systems. Enunciate the principles and components of primary health care and the national health policies to achieve the goal of "Health for all". Identify the



NKP Salve Institute of Medical Sciences & RC & LMH, Nagpur

Department of Surgery And Allied Specialties

Course Outcome/Learning Objectives



(i) GOAL:

The broad goal of the teaching of undergraduate students in Surgery is to produce graduates capable of delivering efficient first contact surgical care.

(i) OBJECTIVES:

The departmental objectives, syllabus and skills to be developed in the department of surgery during undergraduate medical education are presented herewith. These are prepared taking into consideration of various aspects and institutional goals given below:

1. A medical student after graduation may have different avenues of his/her professional career and may work either as a first contact physician in a private, semi-private or public sector or may take up further specialization in surgery or other specialties.
2. He may have to work in different settings such as rural, semi-urban or urban which may have deficient or compromised facilities.
3. These are based on the various health services research data in our community.
4. These are also based on following institutional goals in general; At the end of the teaching/ training the undergraduate will be able to: Diagnose and manage common health problems of the individual and the community appropriate to his/her position as a member of the health team at primary, secondary and tertiary levels. Be competent to practice curative, preventive, promotive and rehabilitative medicine and understand the concepts of primary health care. Understand the importance and implementation of the National Health Programmes in the context of national priorities. Understand the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude required for professional responsibilities. Develop the ability for continued self-learning with a scientific attitude of mind and acquire further expertise in any chosen area of medicine. Inclusion of the book "Manipal Manual of Surgery" as references book for M.B.B.S. Course

A. KNOWLEDGE

At the end of the course, the student shall be able to:

1. Describe aetiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies, in adults and children;
2. Define indications and methods for fluid and electrolyte replacement therapy including blood transfusion.
3. Define asepsis, disinfection and sterilization and recommend judicious use of antibiotics.
4. Describe common malignancies in the country and their management including prevention
5. Enumerate different types of anaesthetic agents, their indications, mode of administration, contraindications and side effects

B. SKILLS

At the end of the course, the student should be able to

1. Diagnose common surgical conditions both acute and chronic, in adult and children.
2. Plan various laboratory tests for surgical conditions and interpret the results;
3. Identify and manage patients of haemorrhagic; septicaemic and other types of shock.
4. Be able to maintain patent air-way and resuscitate:
 - A A critically injured patient.
 - B Patient with cardio-respiratory failure;
 - C A drowning case.
5. Monitor patients of head, chest, spinal and abdominal injuries, both in adults and children
6. Provide primary care for a patient of burns;
7. Acquire principles of operative surgery, including pre-operative, operative and post operative care and monitoring;
8. Treat open wounds including preventive measures against tetanus and gas gangrene. 9. Diagnose neonatal and paediatric surgical emergencies and provide sound primary care before referring the patient to secondary/territory centers;
10. Identify congenital anomalies and refer them for appropriate management. In addition to the skills referred above in items (1) to (10), he shall have observed/assisted/performed the following
 - i. Incision and drainage of abscess;
 - ii. Debridement and suturing open wound;
 - iii. Venesection;
 - iv. Excision of simple cyst and tumours.
 - v. Biopsy and surface malignancy
 - vi. Catheterisation and nasogastric intubation;
 - vii. Circumcision
 - viii. Meatotomy;
 - ix. Vasectomy;
 - x. Peritoneal and pleural aspirations;
 - xi. Diagnostic proctoscopy
 - xii. Hydrocoele operation;
 - xiii. Endotracheal intubation
 - xiv. Tracheostomy and cricothyroidotomy;
 - xv. Chest tube insertion. Human values, and Ethical practice. Adopt ethical principles in all aspects of his clinical practice. Professional honesty and integrity are to be fostered. Surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient. Develop communication skills, in particular the skill to explain various options available in management. Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues and specialist in the field when needed. Respect patient's rights and privileges including patient's right to information and right to seek a second opinion

© INTEGRATION

The undergraduate teaching in surgery shall be integrated at various stages with different pre and para and other clinical department.



NKP Salve Institute of Medical Sciences & RC & LMH, Nagpur

Goals and objectives of Allied Subjects

Course Outcome/Learning Objectives



B) ORTHOPAEDICS

(A) KNOWLEDGE

The student shall be able to:

1. Explain the principles of recognition of bone injuries and dislocation.
2. Apply suitable methods to detect and manage common infections of bones and joints.
3. Identify congenital, skeletal anomalies and their referral for appropriate correction or rehabilitation.
4. Recognize metabolic bone diseases as seen in this country:
5. Explain etiogenesis, manifestations, and diagnosis of neoplasm affecting bones.

(B) SKILLS:

At the end of the course, the student shall be able to:

1. Detect sprains and deliver first aid measures for common fractures and sprains and manage uncomplicated fractures of clavicle, Colles's forearm, phalanges etc.
2. Use techniques of splinting, plaster, immobilization etc.
3. Manage common bone infections, learn indications for sequestration, amputations and corrective measures for bone deformities;
4. Advise aspects of rehabilitation for Polio, Cerebral Palsy and Amputation.

(C) APPLICATION

Be able to perform certain orthopaedic skills, provide sound advice of skeletal and related conditions at primary or secondary health care level.

(D) INTEGRATION

LEARNING METHODS Lectures, Tutorials bedside clinics and lecture cum demonstrations

(C) ANAESTHESIOLOGY DEPARTMENTAL OBJECTIVES:

At the end of the training, the students should be able to:

Perform cardio-pulmonary resuscitation with the available resources and transfer the patients to a bigger hospital for advanced life support. Set up intravenous infusion. Clear and maintain airway in an unconscious patient. Administer oxygen correctly. Perform simple nerve block. Exhibit awareness of the principles of administration of general and local anaesthesia.

SKILLS:

1. Start I V line and infusion in adults, children and neonates.
2. Do venous cutdown.
3. Insert, manage a CVP line.
4. Conduct CPR (Cardiopulmonary resuscitation) and first aid in newborns, children and adults including endotracheal intubation.
5. Perform nerve blocks like infiltration, digital and field blocks.
6. Do lumbar puncture.
7. Administer O₂ by mask, catheter, and O₂ tent and be able to handle O₂ cylinder.

D) RADIOLOGY :

Diagnosis & Imaging Goals :

Realisation of the basic need of various radio-diagnostic tools. Radio-diagnostic Techniques to be adopted in different clinical situations in diagnosis of ailments.

Objectives : Knowledge: -The student shall be able to

1. Understand basics of X-ray / USG production, its utility and hazards
2. Appreciate and diagnose radiological changes in diseases of Chest, Abdomen, Skeletal system, Gastro-intestinal system, Genito-urinary System & CNS
3. Learn about various Imaging techniques like nuclear medicine, computerised tomography (CT), Ultrasound, magnetic resonance imaging (MRI), conventional & Digital subtraction Angiography (DSA)

Skills: -

At the end of the course the student shall be able to

1. Interpret various radiological findings and their consequences
2. Use basic protective techniques during various Imaging procedures
3. Advise appropriate Diagnostic procedures to arrive at an appropriate diagnosis.



GOALS

Comprehensive understanding of Dentistry, Orofacial structures, the Dentition, Maxillary and Mandibular jaws and the Diagnosis, Treatment, Prevention, Restoration and Rehabilitation of the common dental problems

OBJECTIVES A. KNOWLEDGE

Various Diseases, Syndromes, Lesions, Disorders manifesting and affecting the Oral cavity, the Jaws and the TM joint. Effects of Dental Caries, Gingival and Periodontal diseases and Malocclusion.

B. SKILLS

Examination of the Oral cavity and the TM Joint Local Anaesthesia Administration. Dental block Exodontia. Emergency management of Maxillofacial Trauma. Plaque control and Oral health care regimen



NKP Salve Institute of Medical Sciences & RC & LMH, Nagpur
Department of Ophthalmology
Course Outcome/Learning Objectives



These guidelines are based on MCI recommendations. Teaching has to be done keeping in mind the goals and objectives to be achieved by medical student

(i) GOAL

The broad goal of the teaching of students in ophthalmology is to provide such knowledge and skills to the student that shall enable him/her to practice as a clinical and as a primary eye care physician and also to function effectively as a community health leader to assist in the implementation of National Programme for the prevention of blindness and rehabilitation of the visually impaired.

(II) OBJECTIVES

(a) KNOWLEDGE

At the end of the course, student shall have the knowledge of

1. Common problems affecting the eye,
2. Principles of management of major ophthalmic emergencies,
3. main systemic diseases affecting the eye;
4. Effects of local and systemic diseases on patient's vision and the necessary action required to minimize the sequelae of such diseases;
5. Adverse drug reactions with special reference to ophthalmic manifestations;
- 6, Magnitude of blindness in India and its main causes;
7. National programme for control of blindness and its implementation at various levels.
8. Eye care education for prevention of eye problems
9. Role of primary health center in organization of eye camps;
10. organization of primary health care and the functioning of the ophthalmic assistant;
11. Integration of the national programme for control of blindness with the other national health Programmes.
12. Eye bank organization

SKILLS

At the end of the course, the student shall be able to:

1. Elicit a history pertinent to general health and ocular status;
2. Assist in diagnostic procedures such as visual acuity testing, examination of eye, Schiottz tonometry, Staining of Corneal pathology, confrontation perimetry, Subjective refraction including correction of presbyopia and aphakia, direct ophthalmoscopy and conjunctival smear examination and Cover test;
3. Diagnose and treat common problems affecting the eye;
4. Interpret ophthalmic signs in relation to common systemic disorders,
5. Assist/observe therapeutic procedures such as subconjunctival injection, corneal conjunctival foreign body removal, carbolic cautery for corneal ulcers, Nasolacrimal duct syringing and tarsorrhaphy;
6. Provide first aid in major ophthalmic emergencies;
7. Assist to organize community surveys for visual check up;
8. Assist to organize primary eye care service through primary health centers.
9. Use effective means of communication with the public and individual to motivate for surgery in cataract and for eye donation.
10. Establish rapport with his seniors, colleagues and paramedical workers, so as to effectively function as a member of the eye care team.

(C) INTEGRATION

The undergraduate training in Ophthalmology will provide an integrated approach towards other disciplines especially Neurosciences, ENT, General Surgery and Medicine.



NKP Salve Institute of Medical Sciences & RC & LMH, Nagpur
Department of Otorhinolaryngology
Course Outcome/Learning Objectives



These guidelines are based on MCI recommendations. Teaching has to be done keeping in mind the goals and objectives to be achieved by medical student

1. GOAL

The basic idea of undergraduate students teaching and training in otolaryngology is that he /she should have acquired adequate knowledge and skills for optimally Dealing with common disorders, emergencies in E.N.T .and basic principles of impaired hearing rehabilitation.

2. OBJECTIVES

(a) KNOWLEDGE

At the end of course the student shall be able to :

- (1) Describe the basic pathophysiology and common Ear, Nose, Throat diseases and emergencies.
- (2) Adopt the rationale use of commonly used drugs, keeping in mind their side effects
- (3) Suggest common investigative methods and their interpretation.

(b) SKILLS

At the end of course ,the student shall be able to:

1. Examine and diagnose common ear ,nose ,throat problems including premalignant and malignant diseases of head and neck.
2. Manage ear ,nose ,throat (E.N.T)problems at the first level of care and be able to refer whenever and wherever necessary.
3. Assist/do independently basic E.N.T. procedures like ear syringing, Ear dressings, nasal packing removal of foreign bodies from nose, ear, throat.
4. Assist in certain procedures like tracheostomy, endoscopies.
5. Conduct CPR (cardiopulmonary resuscitation).
6. Be able to use auroscope, nasal speculum, tongue depressor, tuning fork and head mirror.

INTEGRATION

The undergraduate training in E.N.T. will provide an integrated approach towards other disciplines especially neurosciences, ophthalmology and general surgery.



NKP Salve Institute of Medical Sciences & RC & LMH, Nagpur
Department of Obstetrics & Gynaecology
Course Outcome/Learning Objectives



These guidelines are based on MCI recommendations Teaching has to be done keeping in mind the goals and objectives to be achieved by medical student

(i) GOAL

The broad goal of the teaching of undergraduate students in Obstetrics and Gynaecology is that he/she shall acquire understanding of anatomy, physiology and pathophysiology of the reproductive system & gain the ability to optimally manage common conditions affecting it.

(II) OBJECTIVES

(A) KNOWLEDGE:

At the end of the course, the student shall be able to: Outline the anatomy, physiology and pathophysiology of the reproductive system and the common conditions affecting it. Detect normal pregnancy, labour puerperium and manage the problems he/she is likely to encounter therein, List the leading causes of maternal perinatal morbidity and mortality. Understand the principles of contraception and various techniques employed, methods of medical termination of pregnancy, sterilization and their complications. Identify the use, abuse and side effects of drugs in pregnancy, pre-menopausal and post-menopausal periods; Describe the national programme of maternal and child health and family welfare and their implementation at various levels. Identify common gynaecological diseases and describe principles of their management. State the indications, techniques and complications of surgeries like Caesarian Section, laparotomy, abdominal and vaginal hysterectomy, Fathe operation and vacuum aspiration for Medical Termination of Pregnancy (MTP)

(B) SKILLS

At the end of the course, the student shall be able to :

- 1.Examine a pregnant woman; recognize high-risk pregnancies AND make appropriate referrals
- 2.conduct a normal delivery, recognize complications and provide postnatal care;
3. Resuscitate the newborn and recognize the congenital anomalies
- 4.advise a couple on the use of various available contraceptive devices and assist in insertion and removal of intra-uterine contraceptive devices.
- 5.Perform pelvic examination, diagnose and manage common gynaecological problems including early detection of genital malignancies;
- 6.Make a vaginal cytological smear, perform a post coital test and wet vaginal smear examination for Trichomonas vaginalis, Moniliasis and gram stain for gonorrhoea; 7.interpretation of data of investigations like biochemical, histopathological, radiological ultrasound etc.

(C) INTEGRATION

The student shall be able to integrate clinical skills with other disciplines and bring about coordination of family welfare programme for the national goal of population control.

(D) GENERAL GUIDELINES FOR TRAINING:

1. attendance of a maternity hospital or the maternity wards of a general hospital including
 - (i) antenatal care the management of the puerperium and a minimum period of 5 months in-patient and out-patient training including family welfare planning
2. of this period of clinical instruction, not less than one month shall be spent as a resident pupil in a maternity ward of a general hospital.
3. during this period, the student shall conduct at least 10 cases of labour under adequate supervision and assist 10 other cases.
4. a certificate showing the number of cases of labour attended by the student in the maternity hospital and/or patient homes respectively, shall be signed by a responsible medical officer on the staff of the hospital and shall state:
 - (a) that the student has been present during the course of labour and personally conducted each case, making the necessary abdominal and other examinations under the supervision of the certifying officer who shall describe his official position.
 - (b) That satisfactory written histories of the cases conducted including wherever possible antenatal and postnatal observations, were presented by the student and initialed by the supervising officer



(i) Goal:

The broad goal of the teaching of undergraduate students in Anatomy aims at providing comprehensive knowledge of the gross and microscopic structure and development of human body to provide a basis for understanding the clinical correlation of organs or structures involved and the anatomical basis for the disease presentations.

(ii) Objectives

A-Knowledge:

At the end of the course the student shall be able to

- (a) Comprehend the normal disposition, clinically relevant interrelationships, functional and cross sectional anatomy of the various structures in the body
- (b) Identify the microscopic structure and correlate elementary ultrastructure of various organs and tissues and correlate the structure with the functions as a pre requisite for understanding the altered state in various disease processes.
- (c) Comprehend the basic structure and connections of the central nervous system to analyse the integrative and regulative functions of the organs and systems. He/she shall be able to locate the site of gross lesions according to the deficits encountered.
- (d) Demonstrate knowledge of the basic principles and sequential development of the organs and systems, recognize the critical stages of development and the effects of common teratogens, genetic mutations and environmental hazards. He/she shall be able to explain the developmental basis of the major variations and abnormalities.

B-Skills

At the end of the course the student shall be able to;

- (a) Identify and locate all the structures of the body and mark the topography of the living anatomy.
- (b) Identify the organs and tissues under the microscope.
- (c) Understand the principles of karyotyping and identify the gross congenital anomalies.
- (d) Understand principles of newer imaging techniques and interpretation of CT scan, sonogram etc.
- (e) Understand clinical basis of some common clinical procedures i.e. intramuscular and intravenous injection, lumbar puncture and kidney biopsy etc.

C-Integration

From the integrated teaching of other basic sciences, student shall be able to comprehend and regulation and integration of the functions of the organs and systems in the body and thus interpret the anatomical basis of disease process.



I) GOAL

The broad goal of the teaching of undergraduate students in physiology aims at providing the student comprehensive knowledge of the normal functions of the organ systems of the body to facilitate an understanding of the physiological basis of health and diseases.

II) EDUCATIONAL OBJECTIVES:

- 1) At the end of the course, the student will be able to: describe the normal functions of all the organ systems, their regulatory mechanisms and interactions of the various systems for well-coordinated total body function.
- 2) Understand the relative contribution of each organ system in the maintenance of the milieu interior (homeostasis).
- 3) Explain the physiological aspects of normal growth and development. Analyse the physiological responses and adaptation to environmental stresses.
- 4) Comprehend the physiological principles underlying pathogenesis and treatment of disease.
- 5) Correlate knowledge of physiology of human reproductive system in relation to National Family Welfare Program.

III) SKILL :

At the end of the course the student shall be able to :

- 1) Conduct experiments designed for study of physiological phenomena.
- 2) Interpret experimental/investigative data.
- 3) Distinguish between normal & abnormal data derived as a result of tests which he/she has performed and observed in the laboratory.

IV) INTEGRATION :

At the end of the integrated teaching the student shall acquire an integrated knowledge of organ structure and function and its regulatory mechanisms.



i) Goal :-

The broad goal of the teaching of undergraduate students in biochemistry is to make them understand the scientific basis of the life processes at the molecular level and to orient them towards the application of the knowledge acquired in solving clinical problems.

ii) Objectives :

a) Knowledge

At the end of the course, the student shall be able to :

- 1) describe the molecular and functional organization of a cell and list its subcellular components;
- 2) delineate structure, function and inter-relationships of biomolecules and consequences of deviation from normal;
- 3) summarize the fundamental aspects of enzymology and clinical application wherein regulation of enzymatic activity is altered;
- 4) describe digestion and assimilation of nutrients and consequences of malnutrition;
- 5) integrate the various aspects of metabolism and their regulatory pathways;
- 6) explain the biochemical basis of inherited disorders with their associated sequelae;
- 7) describe mechanisms involved in maintenance of body fluid and pH homeostasis;
- 8) outline the molecular mechanisms of gene expression and regulation, the principles of genetic engineering and their application in medicine.
- 9) Summarize the molecular concept of body defences and their application in medicine;
- 10) Outline the biochemical basis of environmental health hazards, biochemical basis of cancer and carcinogenesis;
- 11) familiarize with the principles of various conventional and specialized laboratory investigations and instrumentation analysis and interpretation of given data; 12) suggest experiments to support theoretical concepts and clinical diagnosis;

b) SKILLS

At the end of the course, the student shall be able to :

- 1) make use of conventional techniques / instruments to perform biochemical analysis relevant to clinical screening and diagnosis;
- 2) analyze and interpret investigative data;
- 3) demonstrate the skills of solving scientific and clinical problems and decision making.

c) INTEGRATION

The knowledge acquired in biochemistry shall help the students to integrate molecular events with structure and function of the human body in health and disease.