Ordinance Governing PG Diploma Courses (Clinical & Paraclinical) Syllabus / Curriculum 2017 - 18





Accredited 'A' Grade by NAAC (2nd Cycle) Placed in Category 'A' Grade by MHRD(GoI)

KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH

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VISION

To be an outstanding KAHER of excellence ever in pursuit of newer horizons to build self reliant global citizens through assured quality educational programs.

MISSION

- To promote sustainable development of higher education consistent with statutory and regulatory requirements.
- To plan continuously provide necessary infrastructure, learning resources required for quality education and innovations.
- To stimulate to extend the frontiers of knowledge, through faculty development and continuing education programs.
- To make research a significant activity involving staff, students and society.
- To promote industry / organization, interaction/collaborations with regional/national / international bodies.
- To establish healthy systems for communication among all stakeholders for vision oriented growth.
- To fulfill the national obligation through rural health missions.

OBJECTIVES

The objectives are to realize the following at KAHER and its constituent institutions:

- To implement effectively the programs through creativity and innovation in teaching, learning and evaluation.
- To make existing programs more careers oriented through effective system of review and redesign of curriculum.
- To impart spirit of enquiry and scientific temperament among students through research oriented activities.
- To enhance reading and learning capabilities among faculty and students and inculcate sense of life long learning.
- To promulgate process for effective, continuous, objective oriented student performance evaluation.
- To ordinate periodic performance evaluation of the faculty.
- To incorporate themes to build values. Civic responsibilities & sense of national integrity.
- To ensure that the academic, career and personal counseling are in-built into the system of curriculum delivery.
- To strengthen, develop and implement staff and student welfare programs.
- To adopt and implement principles of participation, transparency and accountability in governance of academic and administrative activities.
- To constantly display sensitivity and respond to changing educational, social, and community demands.
- To promote public-private partnership.

INSIGNIA



The Emblem of the KAHER is a Philosophical statement in Symbolic.

The Emblem...

A close look at the emblem unveils a pillar, a symbol of the "KAHER of Excellence" built on strong values & principles.

The Palm and the Seven Stars...

The Palm is the palm of the teacher- the hand that acts, promises & guides the students to reach for the Seven Stars...

The Seven Stars signify the 'Saptarishi Dnyanamandal", the Great Bear-a constellation made of Seven Stars in the sky, each signifying a particular Domain. Our culture says: The true objective of human birth is to master these Knowledge Domains.

The Seven Stars also represent the Saptarishis, the founders of KLE Society whose selfless service and intense desire for "Dnyana Dasoha" laid the foundation for creating the knowledge called KLE Society.

Hence another significance of the raised palm is our tribute to these great Souls for making this KAHER a possibility.

Empowering Professionals...

'Empowering Professionals', inscription at the base of the Emblem conveys that out Organization with its strength, maturity and wisdom forever strive to empower the student community to become globally competent professionals. It has been a guiding force for many student generations in the past, and will continue to inspire many forth coming generations.



KLE Academy of Higher Education & Research

(Formerly known as KLE UNIVERSITY)

[Established under Section 3 of the UGC Act, 1956 vide Government of India Notification No. F. 9-19/2000-U.3(A)] Accredited 'A' Grade by NAAC (2nd Cycle) Placed in Category 'A' by MHRD(Gol) JNMC Campus, Nehru Nagar, Belagavi-590 010, Karnataka State, India

Ph: 0831-2444444/2493779 Fax : 0831-2493777 Web: http://www.kledeemeduniversity.edu.in E-mail: info@kledeemeduniversity.edu.in

Ref. No. KLEU/AC/17-18/D-216 (9)

25th April 2017

NOTIFICATION

Sub : Ordinance governing the syllabus/curriculum for Post-Graduate Diploma Courses (Medicine)

Ref : Minutes of the meeting of the Academic Council of the KAHER held on 21st April 2017.

In exercise of the powers conferred under Rule A-04 (i) of the Memorandum of Association of the KAHER, the Academic Council of the KAHER is pleased to approve the Ordinance governing the syllabus / curriculum for **Post-Graduate Diploma Course** (Medicine) Program in its meeting held on 21st April 2017.

- Diploma in Orthopaedics (D'Ortho)
- Diploma in Paediatrics (D.C.H)
- Diploma in Radio-Diagnosis (DMRD)
- Diploma in Obstetrics and Gynaecology (D.G.O.)
- Diploma in Otorhinolaryngology and Head and Neck Surgery (D.L.O.)
- Diploma in Dermatology, Venereology and Leprosy (D.D.V.L.)
- Diploma in Anaesthesiology (D.A.)
- Diploma in Ophthalmology (D.O.M.S.)

The Ordinance shall be effective for the students admitted to **Post-Graduate Diploma Course (Medicine)** in the constituent college of the KAHER viz. Jawaharlal Nehru Medical College, Belagavi from the academic session 2017-18 onwards.

By Order

REGISTRAR

То

The Dean Faculty of Medicine, J.N. Medical College, BELAGAVI.

CC to :

- 1. The Secretary, University Grants Commission, New Delhi,
- 2. The PA to Hon. Chancellor, KAHER, Belagavi.
- 3. The Special Officer to Hon. Vice-Chancellor, KAHER, Belagavi.
- 4. All Officers of the KAHER Academic Affairs / Allied Course / Examination Branch.

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- Diploma in Clinical Pathology (DCP)
- Diploma in Public Health (DPH)
- Diploma in Forensic Medicine (DFM)

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By Ørder, REGISTRAR

To The Dean, Faculty of Dentistry, KLE, VK Institute of Dental Sciences, BELAGAVI.

CC to:

- 1. The Secretary, University Grants Commission, New Delhi.
- 2. The PA to Hon. Chancellor, KAHER, Belagavi.
- 3. The Special Officer to Hon. Vice-Chancellor, KAHER, Belagavi.
- 4. All Officers of the KAHER, Academic Affairs / Examination Branch.

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SECTION - I REGULATIONS FOR POST GRADUATE DIPLOMA COURSES IN MEDICAL SCIENCES

1. Postgraduate Diploma Courses:

Postgraduate diploma course may be pursued in the following subjects:

- 1. Orthopaedics (D'Ortho)
- 2. Paeditrics (D.C.H.)
- 3. Radio-Diagnosis (DMRD)
- 4. Obstetrics and Gynaecology (D.G.O.)
- 5. Otorhinolaryngology and Head and Neck Surgery (D.L.O.)
- 6. Dermatology, Venereology and Leprosy (D.D.V.L.)
- 7. Anaesthesiology (D.A.)
- 8. Ophthalmology (D.O.M.S)

and such other subjects as might be introduced in future from time to time, and recognized by Medical Council of India.

2. Eligibility for Admission

SELECTION OF POSTGRADUATE STUDENTS

- A. Students for postgraduate medical courses shall be selected strictly on the basis of their academic merit.
- B. For determining the academic merit, the KAHER shall adopt the following procedure for diploma courses:
 - i. On the basis of the merit as determined by centralised competitive test held at National level ie NEET-PG (National eligibility cum entrance test) conducted by National board of examination.
- 2.1. A candidate affiliated to this KAHER and who has passed final year M.B.B.S. examination after pursuing a study in a medical college recognized by Medical Council of India, from a recognized Medical College affiliated to any other

KAHER recognized as equivalent thereto ard has completed one year compulsory rotating internship in a teaching Institution or other Institution recognized by the Medical Council of India, and has obtained permanent registration of any State Medicle Council shall be eligible for admission.

3. Obtaining Eligibility Certificate by the KAHER before making Admission

No candidate shall be admitted for any postgraduate diploma course unless the candidate has obtained and produced the eligibility certificate issued by the KAHER. The candidate has to make an application to the KAHER with the following documents along with the prescribed fee:

- i. MBBS pass / degree certificate issued by the KAHER.
- ii. Marks cards of all the KAHER examinations passed during MBBS course.
- iii. Attempt Certificate issued by the Principal.
- iv. Certificale regarding the recognition of the medical college by the Medical Council of India.
- v. Completion of internship certificate.
- vi. In case internship was done in a non-teaching hospital, a certificate from the Medical Council of India that the hospital has been recognized for internship.
- vii. Registration by any State Medical Council.

Candidates should obtain the Eligibility Certificate before the last date for admission as notified by the KAHER.

A candidate who has been admitted to postgraduate course should register his / her name in the KAHER within a month of admission after paying the registration fee.

4. Intake of Students

The intake of students to each course shall be in accordance with the MCI approval.

5. Duration of diploma courses:

The course of study shall be for a period of 2 years consisting of 4 terms.

6. Method of training

The training of postgraduate for diploma shall be residency pattern 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. Even,' candidate should take part in seminars, group discussions, grand rounds, case demonstration, clinics, journal review meetings, CPC and clinical meeting. Every candidate should be required to participate in the teaching and :raining programme of undergraduate students. Training should include involvement in laboratory and experimental work, and research studies. Students should be posted to basic medical sciences and allied speciality departments or institutions.

7. Attendance, Progress and Conduct

- 7.1 A candidate pursuing diploma course should work 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.
- 7.2 Each year shall be taken as a unit for the purpose of calculating attendance.
- 7.3 Every student shall attend symposia, seminars, conferences, journal review 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.
- 7.4 Every candidate is required to attend a minimum of 80% of the training during each academic year of the post graduate course. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% attendance of training period every year.
- 7.5 Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the KAHER Examinations.

8. Monitoring Progress of Studies:

8.1 Work diary / Log Book - Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc (Please see Section 3 for model check lists and log book specimen copy). Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any,

conducted by the candidate. The work diary shall be scrutinised and certified by the Head of the Department and Head of the Institution, and presented to the KAHER practical/clinical examination.

- 8.2 The concerned departments may conduct two tests, one of them be at the end of first year and the other in the second year three months before the final examination. The tests may include written papers, practicals, clinicals and viva voce.
- 8.3 Records: Records and marks obtained in tests will be maintained by the Head of the Department and will be made available to the KAHER.

9. Schedule of Examination

The examination for the diploma courses shall be held at the end of two academic years (four academic terms). The KAHER shall conduct two examinations in a year at an interval of four to six months between the two examination. Not more than two examinations shall be conducted in an academic year.

10. Scheme of Examination

Diploma examination in any subject shall consist of Theory (written papers), Practical / Clinical and Viva - Voce.

Theory Examination for Diploma (Written Paper)

(There shall be 3 theory papers, each of 3 hours duration, carrying 100 marks each).

Type of	Number of	Marks for	Total Marks
Questions	questions	each question	
Long Essay questions	02	20	40
Short Essay questions	06	10	60
GRAND TOTAL	100		

10.1 Theory: There shall be three written question papers each carrying 100 marks. Each paper will be of three hours duration. In clinical subjects one paper out of this shall be on basic medical sciences.

10.2 Practical Clinical Examination:

In case of practical examination it should be aimed at assessing competence, skills related to laboratory procedures as well as testing students ability to make

relevant and valid observations, interpretation of laboratory or experimental work relevant to his/her subject.

In case of clinical examination, it should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine at least one long case and two short cases /spotters.

The maximum marks for Practical / Clinical shall be 200.

- **10.3 Viva Voce Examination:** Viva Voce examination should aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. The total marks shall be 100.
- **10.4 Criteria for declaring as pass in KAHER Examination.** : A candidate shall secure not less than 50% marks in each head of passing which shall include
 - (1) Theory
 - 2) Practical including clinical and viva voce examination.

The candidate has to pass theory and practical independently.

A candidate securing less than 50% of marks as described above shall be declared to have failed in the examination. Failed candidate may appear in any subsequent examination upon payment of fresh fee to the Controller of Examinations.

- **10.5 Declaration of distinction:** A successful candidate passing the KAHER examination in first attempt will be declared to have passed the examination with distinction, if the grand total aggregate marks is 75 percent and above. Distinction will not be awarded for candidates passing the examination in more than one attempt.
- **10.6** Number of Candidates per day: The maximum number of candidates for practical/ clinical and viva-voce examination for diploma shall be maximum 8 per day.

SECTION - II

GOALS AND GENERAL OBJECTIVES OF POSTGRADUATE MEDICAL EDUCATION PROGRAMME

Goals

The goals of postgraduate medical education shall be to produce a competent specialist and / or a medical teacher

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

General Objectives

At the end of the postgraduate training in the discipline concerned, the student shall be able to:

- i) Recognize the importance of the concerned speciality in the context of the health needs of the community and the national priorities in the health sector.
- ii) Practice the speciality concerned ethically and in steps with the principles of primary health care.
- iii) Demonstrate sufficient understanding of the basic sciences relevant to the concerned speciality.
- 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 speciality 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 behaviour in accordance with the social norms and expectations.
- ix) Play the assigned role in the implementation of national health programmes 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 and recognize continuing educational needs; select and use appropriate learning resources.
- xii) Demonstrate competence in basic concepts 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 health 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 programme so that he or she can iirect the efforts towards the attainment of these competencies.

Source: Medical Council of India, Regulations on Postgraduate Medical Education, 2000.

POST GRADUATE DIPLOMA COURSE IN ORTHOPAEDICS (D.ORTHO)

I. GOALS:

A candidate upon successfully qualifying in the Diploma in Orthopaedics examination should be able to

- 1. Identify the diseases and injuries of musculoskeletal system and obtain proper history and perform thorough clinical examination.
- 2. Plan and interpret investigations and institute the management in diseases and injuries of musculoskeletal system.
- 3. Acquire skills to manage Orthopaedic services.
- 4. Organise rehabilitative services for the physically handicapped persons

II. OBJECTIVES:

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The objectives may be considered under the subheadings.

- 1. Knowledge
- 2. Skills
- 3. Human values, ethical practice and communication abilities.

1. Knowledge:

At the end of the course the student should be able to describe:

- 1. The mode of injury, clinical presentation, plan & interpret investigations and institute the management of musculoskeletal injury.
- 2. The non operative and operative management and complications of fractures of limb bones.
- 3. The mechanism of metabolic response to trauma and infections.
- 4. The process of fracture healing and its complications

- 5. The structure and function of diaphragm, abdominal wall, thorax, pelvis and their contents in relation to trauma and diseases.
- 6. The mode of injury & clinical presentation, plan and interpret investigations and institute management of fracture pelvis and ribs.
- 7. The mechanism of hemostasis, fibrinolysis and methods to control hemorrhage.
- 8. The structure and function of the vertebral column, the muscles, ligaments, vertebrae, intervertebral disc, spinal cord, meninges, and related blood supply in normal and in disorders.
- 9. The mode of injury, clinical presentation, plan & interpret investigation, prognostic factors, institute management of vertebral column and spinal cord.
- 10. The morphogenesis of axial and appendicular skeleton.
- 11. The normal structure, function and growth changes in Musculo skeletal system.
- 12. The causative factors, clinical presentation, plan and interpret investigations, prevention and institute the management of limb deficiencies and deformities.
- 13. The pathogenesis, clinical features, plan and interpret investigations and institute the management of infectious diseases of bones and joints.
- 14. The pathogenesis, clinical presentation, plan and interpret investigations and institute appropriate interventions in Cerebral palsy and Muscular dystrophies
- 15. The etiology & pathogenesis, clinical presentation, plan and interpret the investigations and institute management of the musculo skeletal manifestations of haematological origin.
- 16. The musculo skeletal manifestations of aids and plan the management
- 17. Identify situations requiring rehabilitation services and prescribe suitable orthotic, prosthetic appliances and act as a member of team providing rehabilitative care
- 18. Identify a problem, prepare a research protocol, conduct a study, record observations, analyze data, interpret the results discuss and disseminate the findings.
- 19. Identify emergency situations like disaster and plan disaster management at district /zonal / tertiary care hospital and identify learning objectives in different situations for the medical team and facilitate teaching learning activities.

20. Basic knowledge about total hip and total knee arthroplasty and arthroscopy.

2. SKILLS :

Students should be able to perform the following

- 1. Manage wound and skin graft
- 2. Manage shock and resuscitation
- 3. Resuscitate injured patients
- 4. Expose & repair the femoral, popliteal and brachial artery
- 5. Perform incision and drainage abscesses
- 6. Perform biopsy-closed & open
- 7. Apply all types of casts, splints & tractions
- 8. Closed reduction of fractures
- 9. Recognize compartment syndrome and perform surgical decompression
- 10. Open reduction/internal fixation of unreduced dislocations
- 11. Internal fixation of common fractures of long bones of limbs
- 12. Debridement
- 13. Apply external fixators
- 14. Surgical decompression in case of acute osteomyelitis
- 15. Sequestrectomy and saucerisation
- 16. Release operation in common entrapment syndromes and other orthopedic problems
- 17. Local steroid infiltrations in the soft tissues & joints
- 18. Correct common deformities of limbs by conservative / surgical procedures
- 19. Amputations and disarticulations
- 20. Excision of benign tumor, cysts and cyst like conditions of bones and soft tissues
- 21. All types of bone grafting

3. Human values, Ethical practice and Communication abilities

- Adopt ethical principles in all aspects of his/her practice, professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.
- Provide leadership and get the best out of his team in a congenial working atmosphere.
- Apply high moral and ethical standard while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed,
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

III. COURSE CONTENTS:

The candidate should acquire thorough theoretical knowledge in the basic sciences, trauma and orthopaedic and related sciences.

i. Theory

1) Basic sciences:

- 1) Anatomy, Embryology, Development of Musculo Skeletal System & Histology
- 2) Musculo Skeletal Anatomy, Anatomy of spine, shoulder girdle, chest, Abdominopelvic girdle, upper limb & lower limb.
- 3) Physiology, Physiology of musculo skeletal system, bone metabolism, hormonal control of musculo skeletal system.
- 4) Bio Chemistry, Bio chemical aspects related to Orthopaedics.
- 5) Pathology; General pathology, Pathology related to Orthopaedics.
- 6) Bio Mechanics, Biomechanics of Trunk and Limbs

- 7) Pharmacology, Anti-inflammatory, Antibiotics, Anti-malignant drugs and other related Pharmacotherapeutic drugs.
- 8) Suture material, Implant material.

2) Orthopaedic Traumatology:

At the end of the course the candidates should be able to describe basic concepts and mechanisms of injury, clinical presentation, interpret investigations, plan and institute the management of musculo skeletal injured patients and to recognize complications and their efficient management.

- 1) Head injury & facio maxillary injury.
- 2) General principles of management of Neurovascular injury.
- 3) Management of polytrauma.
- 4) Consequences of musculoskeletal trauma & rehabilitation of the injured.
- 5) General principles of management in musculoskeletal trauma surgical & Conservative.
- 6) Shock and management
- 7) Metabolic response to trauma and infections
- 8) Fracture healing closed / open fractures causes of non union & management.
- 9) Musculo skeletal trauma
- 10) Regional: Cervical, Thoracic, Lumbar and sacral injuries Shoulder girdle,
- 11) Pelvic girdle, upper limb & lower limb.

12) Instruments & implants in orthopedic trauma management

3) ORTHOPAEDIC DISEASES:

Aetio-pathogenesis, clinical features, investigations and management of congenital and acquired limb deficiencies and deformities

1) Nutritional deficiency diseases affecting bone & joints

- 2) Metabolic & hormonal osteoarthopathies
- 3) Skeletal dysplasias and developmental diseases
- 4) Infective diseases of musculoskeletal system, polio, Pyogenic, tubercular, mycotic bone and joint infections
- 5) Rheumatoid arthropathy, rheumatic disease
- 6) Osteoarthritis
- 7) Ankylosing spondyloarthropathies
- 8) Sero negative spondyloarthopathies
- 9) Cerebral palsy, poliomyelitis
- 10) Muscular dystrophies
- 11) Nerve injuries
- 12) Bleeding disorders, haemoglobinopathies, osteonecrosis of bones, Perthes, Osgoodschlatters, Kienbocks disease, Severs diseases etc,
- 13) Musculoskeletal tumours
- 14) Amputations
- 15) Prosthetics & Orthotics and physical medicine
- 16) Musculoskeletal aids orthotics & Prosthesis
- 17) Non traumatic miscellaneous disorders of musculoskeletal system
- 18) Evaluation of physical disability

4) SPORTS MEDICINE AND ARTHROSCOPY

5) ARTHROSCOPY OF SHOULDER, KNEE ETC..

6) DIAGNOSTIC SKILLS AND KNOWLEDGE OF

- 1) Radiology:
 - i. Plain radiology, CT Scan, MRI, Bone scan & Ultrasonography,
 - ii. Interventional radiography: myelography, Sinogram, Arthrography, & CT guided biopsy
- 2) Biopsy: FNAC, Trocar & Open biopsy

3) Arthroscopy

7) LIMB RECONSTRUCTION SURGERIES (L.R.S.)

8) SURGICAL SKILLS TO ACQUIRE:

The candidates should be able to describe and perform the following at the end of the course.

- 1) Identify & rectify Electrolyte Imbalance and management of shock.
- 2) Cardiopulmonary resuscitation, Orotracheal intubations and tracheostomy.
- 3) Acute & chronic respiratory insufficiency interpretation.
- 4) Triage & establishment of treatment priorities in polytrauma patients.
- 5) Identification of chest wall / Lung injuries & chest tube insertion.
- 6) Peripheral venous cut down.
- 7) Identify potential complications of major multi organ injuries.
- 8) Perform incision and drainage of abscess
- 9) Aspiration and infiltration of joints
- 10) Closed reduction of fractures
- 11) Application of casts, splints & tractions
- 12) Fracture fixation: closed / open reduction & internal fixation of bones
- 13) Knowledge of debridement, surgical toilet & application of external fixators
- 14) Arthrotomy & synovectomy
- 15) Arthroplasty & Arthrodesis

Essential list of surgical procedures.

A] Basic graduate skills

The students should have acquired the certain skills during his under-graduation

and internship. These skills have to be reinforced at the beginning of the training periods. These skills include:

Procedure	Category	Year	Number
Insertion of I.V. lines. nasogastric tube, urinary catheters, etc.	PI	Ι	50
Minor suturing and removal of sutures	PI	Ι	50
Removal of tubes and drains	PI	Ι	50
Routine wound dressings	PI	Ι	50

B] Ward Procedure

Ward work forms an important part of the training of the surgeon. In addition to the routine examination of the patient with proper recording of findings, diligent practice of the following is recommended.

Procedure	Category	Year	Number
Abdominal Paracentesis ,Aspiration of joints & LIHC	PI	Ι	5
Ability to teach UG's and Interns	PI	Ι	NA
Blood sampling- venous and arterial	PI	I	NA
Bone Marrow Aspiration	PI	I	2
Major wound dressing	PI	I	10
Communication skills with patients, relatives colleagues and paramedical staff	PI	Ι	NA*
Ordering of the requisite laboratory and radiological investigations and interpretation of the reports in light of the clinical picture	PI	Ι	NA
Proficiency in common ward procedures	PA	Ι	NA
Skills for Per-rectal examination and Proctoscopy	PI	Ι	NA
Thoracocentesis	PI	I	5
Universal precautions against communicable diseases	PI	Ι	NA
Venesection.	PI	+	5

NA: Not Applicable.

C] ICU Procedures

Procedure	Category	Year	Number
Insertion of Arterial lines	PI	+	10
Insertion of Central venous lines	PI		10
Insertion of endotracheal tubes	PI	+	10
Intercostal Drainage	PI	I	5
Tracheostomy	PI		2
Working knowledge of ventilators and	PI	Ι	NA
various Monitors			
Interpretation of Arterial blood gases	PI	I	NA
Correction of Electrolyte disturbances	PI		NA
Prescribing Parenteral & Enteral nutrition	PI		NA

D] Emergency Room Procedures

Procedure	Category	Year	Number
Application of Splints for Fractures	PI	I	NA
Arterial and Venous Lines	PI		NA
Assessment and initial management of	PI	Ι	NA
polytrauma			
Cardiopulmonary Resuscitation	PI	Ι	NA
Procedure	Category	Year	Number
Management of Airway obstruction	PI	I	NA
Management of shock and Cardiac	PI	I	NA
Respiratory failure			
Recognition and Initial management of	PI	Ι	NA
Orthopaedic Emergencies			
Suturing Techniques	PI		NA

E] Pre-operative workup

Procedure	Category	Year	Number
Ability for adequate pre-operative preparation in special situations like diabetes, renal failure cardiac and respiratory failure etc. and risk Stratification	PI	I	NA
Communication skills with special reference to obtaining informed consent	PI	I	NA
Proper pre-operative assessment and preparation of patients including DVT prophylaxis, Blood transfusion and Antibiotics	PI	I	NA

F] Post-operative Care

Procedure	Category	Year	Number
Airway management	PI		
Basic Physiotherapy	PI	I	NA
Management of epidural analgesia	PI	I	NA
Management of Sinus	PI	Ι	NA
Management of postoperative hypo and	PI	Ι	NA
hypertension			
Postoperative pain control	PI	I	NA
Skills for nutritional rehabilitation of patients.	PI	I	NA
Skills for proper Fluid & Antibiotic	PI	Ι	NA
management			
Amputation stump care	PI	I	NA

G] Minor O.T. Procedure

Procedure	Category	Year	Number
Ganglion under Local Anesthesia	PI	I	3
Drainage of Abscesses	PI	Ι	3
FNAC	PI	Ι	3
Major dressings – Open fractures	PI	Ι	20
Release of compartment syndrome	PI	Π	5
Minor Biopsies – Lymph node, ulcer swellings etc.	PI	Ι	10
Reduction and plaster application of simple fractures and dislocations	PA	Ι	10
Removal of simple subcutaneous swellings	PI	I	10

Arthrotomy, skeletal traction	PA/A/O/PI	II	5
Suturing Techniques	PI	_	20
Arthroscopy	PA		3
Wound debridement	PI		5

H] Major Operating rooms techniques

Procedure	Category	Year	Number
Instrument arrangement and trolley layout	PA		NA
Skills in sterilization techniques. O.T. Layout and Asepsis	Ο	Ι	NA
Skin preparation- painting and draping	PI	I	NA
Techniques of scrubbing and gowning	PI		NA

I] Orthopaedic Operative Procedures

Procedure	Category	Year	Number
Percutaneous pin fixation for fractures	PI	I	5
External fixator application	PI	13	3
ORIF – Trochanteric fractures	PI and PA	II	2
Hemiarthroplasty – fracture neck femur	PA	II	2
Internal fixation for fracture shaft femur	PI	II	3
Internal fixation for fracture patella	PA	II	2
Internal fixation for fracture humerus	Pa	II	2
Internal fixation for fracture both bones forearm	PA	II	3
Internal fixation for fractures of leg bones	PI		5
Management of complex fracture dislocation	PA	II	3
Open reduction of dislocations	PA	II	2
Management of complex wounds	PI	II	5
Diagnostic & Therapeutic Arthroscopy	PA	II	1
Arthroplasty of Hip & Knee	0	II	3
Repair of peripheral nerve injuries	PA		3
Amputation & Disarticulation	PI	II	3
Vascular repair	PA/A	II	2
CTEV – Soft tissue release	PI	II	3
HDP	PA	II	1
Laminectomy	A/O		2
Quadriceps plasty	PA	II	3
Spinal fusion	0		3
Discoidectomy	A/O	II	10
Pott's spine surgeries	0	II	5

Osteotomies	PA	II	2
ORIF Pelvic Fractures	O/PA	Ш	3
Reconstructive Surgery Of Great Toe (Hallux	PA	Ш	3
Correction)			
Scoliosis Correction	0	Ш	2
Tendon Transfers	O/PA	П	3
Tumour Surgery & Biopsy	O/PA	П	5
VI.C – Bone Shortening	PA	Ш	2
Implant Removal	PA	Π	5
AVNFH Decompression With Fibula Graft	PA	Ш	3
Rotator Cuff Surgery	O/PA	Ξ	2
Arthrodesis - Upper Limb Joints	O/PA	П	3
Arthrodesis - Lower Limb Joints	O/PA	П	2
Fixation of fractures of the small bones of hand &	PA	Ш	5
foot			
Skin grafting	PI	Π	5
Bone grafting	PI	II	5

O- Observed, A – Assisted, PA – Performed with Assistance, PI – Performed Independently

7) TRAUMA CARE

- 1. Closed reductions of fractures, Plaster application.
- 2. Debridement of open fractures, External fixations
- 3. Internal fixations of minor fractures with K wire
- 4. Tension band wiring of fracture patella, fracture olecranon, etc
- 5. DCP of forearm bones, tibia, etc
- 6. Hemi replacement arthroplasty of femur
- 7. Dynamic condylar screw fixation
- 8. Acetabular fracture fixation
- 9. Dynamic Hip Screw fixtation
- 10. Interlocking nailing of long bone fractures

1) NON-TRAUMATIC CONDITIONS.

- 1. Manipulative correction of congenital problems like CTEV
- 2. Biopsies
- 3. Excision of benign lesions
- 4. Tendon lengthening
- 5. Carpal tunnel release
- 6. Bone grafting
- 7. Osteotomies
- 8. Soft tissue release
- 9. Tendon transfers

10. Basic arthroscopy (diagnostic)

IV. TEACHING AND LEARNING ACTIVITIES:

A) Theoretical Teaching:

- **1.** Lectures: Lectures are to be kept to a minimum. Certain selected topics can be taken as lectures. Lectures may be didactic or integrated.
- 2. Journal Club: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book the relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A time table with names of the students and the moderator should be announced in advance.
- **3. Subject Seminar:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A time table for the subject with names of the students and the moderator should be announced in advance.
- 4. Case Discussion: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using

check lists and would carry weightage for internal assessment. A timetable for the case presentation with names of the students should be announced in advance.

- 5. Ward Rounds: Ward rounds may be service or teaching rounds.
 - a) Service Rounds: Postgraduate students should do service rounds every day for the care of the patients. Newly admitted patients should be worked up by the post graduate student and presented to the faculty members the following day.
 - b) Teaching Rounds: Every unit should have 'grand rounds' for teaching purpose at the bed side. A diary should be maintained for day-to-day activities by the post-graduate students.
 Entries of (a) and (b) should be made in the Log book.
- 6. Clinico-Pathological Conference: Recommended once a month for all post graduate students. Presentation to be done by rotation. Presentations will be assessed using checklist. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPCs.
- 7. Inter Departmental Meetings: Strongly recommended particularly with departments of Pathology and Radio-Diagnosis at least once a month. These meetings should be attended by post-graduate students and relevant entries must be made in the Log Book.

Pathology: Interesting cases shall be chosen and presented by the postgraduate students and discussed by them as well as the senior staff of Pathology department. The staff of Pathology department would then show the slides and present final diagnosis. In these sessions the advanced immuno-histo-chemical techniques, the burgeoning markers, other recent developments can be discussed.

Radio-diagnosis: Interesting cases and the imaging modalities should be discussed. Emphasis should be given for the radiological differential diagnosis.

8. Mortality Meeting: The mortality meeting should be conducted in the department every month. The post graduate student should prepare the details regarding the cause of death after going through the case records in detail, and should present during the mortality meeting. The death records will be discussed in detail during this meeting.

- **9.** Continuing Medical Education Programmes (CME): Recommended that at least 1 state level CME programmes should be attended by each student during the course.
- **10. Conferences:** Attending conference is compulsory. Post-graduate student should attend one national and one state level conference during the course.
- **11. Research Activities:** The Post-graduate students to be encouraged to carry out research activities in the department, institution and or community.

B) Clinical / Practical Training:

a. Anatomy	One hour / Week
	for Three months
b. Trauma	2 months
c. Plastic surgery	15 days
d. Neurosurgery	15 days

1. Rotational Postings in other Departments:

2. Basic Life Support Course and Basic skill Course (1st year)

Advanced Skill Course in Orthopaedics (2nd year)

V. OTHER CRITERIA TO FULFILL FOR THE DIPLOMA COURSE:

1. Internal evaluation:

During the course of two years, the department will conduct two tests. One at the end of first year and other at the end of second year. The second test will a preliminary examination which may be held three months before the final examination. The test may include the written papers, practicals / clinicals and viva-voce. Records and marks obtained in such tests will be maintained by the head of the department and will be sent to the University when called for.

Results of all evaluations should be entered into P.G's diary and departmental file for documentation purposes. Main purpose of periodic examination and accountability is to ensure clinical expertise of students with practical and communication skills and balance broader concept of diagnostic and therapeutic challenges.

2. Maintenance of Log Book:

Every candidate shall maintain a Log book/work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any, conducted by the candidate. All the procedures performed by the post graduate students should be entered in the Log book. All the daily activities including the ward rounds and the routine procedures preformed on day to day basis should be entered in the Log book and it should be verified and signed by the faculty member. The Log book shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the University practical/clinical examination.

VI. SCHEME OF EXAMINATION:

Candidates will be allowed to appear for examination only if attendance (Minimum 80%) and internal assessment are satisfactory.

i) Theory: 300 Marks

There shall be three papers, each of three hours duration. Total marks of each paper will be 100. Questions on recent advances may be asked in any or all the papers. The format of each paper will be same as shown below.

Paper I: Basic and clinical sciences as applied Orthopedics

Paper II: Orthopaedic Traumatology

Type of Questions	No. of	Marks for each question	Total Marks
	Questions		
Long essay	02	20	40
Short essay	06	10	60
Grand Total			100

Paper III: Cold Orthopedics

Paper I- Basic and clinical sciences as applied to Orthopaedics - 100 marks

Paper II- Orthopaedic Traumatology

- 100 marks - 100 marks

Paper III - Cold Orthopaedics

Note : The distribution of chapters/topics shown against the papers are suggestive only and may overlap or change.

B. Clinical Examination: 200 Marks

There shall be one long case and two short cases to be examined and presented by each candidate. Marks shall be 200 as shown below:

One Long Case	-		=	100 Marks
Two Short Cases	-	50 Marks each	=	100 Marks

C. Viva- Voce Examination: 100 Marks

Aims: To elicit candidate's knowledge and investigative/ therapeutic skills.

1). Viva-voce examination – [100 Marks]

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents. In addition candidates may be given case reports, ABG, gross specimens, histo-pathology slides, X-rays, ultrasound, CT and MRI scan images, Orthotics and Prosthetics etc., for interpretation and questions on these as well as use of instruments will be asked. Student's knowledge on use of instruments and drugs will also be evaluated during viva-voce examination.

D. Maximum Marks:

Maximum marks for Diploma in Orthopaedics	Theory	Practical	Viva	Grand Total
(D' Ortho)	300	200	100	600

VII.	RECOMMEN	NDED BOOK	S (Latest	editions):
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Sr.	Name of the Textbook	Authors	Publisher
No.			
1.	Cambell's Operative Orthopaedics,	Terry Canale assistance by Kay Daughtery.	Mosby
2.	Fractures in Adults and Children	Charles. A. Rockwood Jr, David Green, Robert. E. Bucholz & James. D. Heckman- Lippincot	Lippincot, Williams & Wilkinson.
3.	Tureks Orthopedics	By- Weinstein. SL. & Others,	Lippincot, Williams & Wilkinson.
4.	Mercer's Orthopaedic Surgery	By- Robert. B. Duthie. & George. Bentley.	Hodderd & ARNOLD
5.	Watson-Jones Fractures & Joint Injuries	By- J. N. Wilson	Churchill-Livingstone.
6.	Total Hip Joint Replacement	Eftekhar. N. S.	Mosby
7.	By- Gustilo	Fractures & Dislocations	Mosby
8.	Pediatric Orthopaedics	Tachdain	W.B.Saunders
9.	Clinical Surgery	Das	S. Das.
10.	Clinical Orthopaedic Examination	Ronald McRae	Churchill Livingstone
11.	Splints & Tractions in Orthopaedics		Stewart
12.	Tuberculosis of Spine	Tuli. S. M.	Jaypee brothers
13.	AO Principles of Fracture Management	Colton. C. L. Fernandez. A.	Theime Medical Publishers.
14.	The Lumbar Spine	J. N. Weinstein & S. W. Wiesel	Saunders
15.	Bone Tumors	J. M. Mirra	Lee & Febiger

VIII. RECOMMENDED JOURNALS:

Sr.	Name of the Journal
No.	
1.	Journal of bone and Joint Surgery
2.	American journal of Orthopaedics
3.	Clinical Orthopaedics and Related Research
4.	Orthopaedic clinics of North America
5.	Trauma
6.	Journal of Arthroscopy
7.	Indian Journal of Orthopaedics
8.	Journal of Arthroplasty
9.	Journal of Spine Surgery
10.	Acta orthopedica Scandinavia
11.	Journal of Paediatric Orthopa edics

POST GRADUATE DIPLOMA COURSE IN PAEDIATRICS (DCH)

I. GOALS:

The goal of the Diploma Course in Pediatrics is to produce a competent pediatrician who:

- Recognizes the health needs of infants, children and adolescents and carries out professional obligations in keeping with principles of National Health Policy and professional ethics
- Has acquired the competencies pertaining to pediatrics that are required to be practiced in the community
- Has acquired skills in effectively communicating with the child, family and the community

II. OBJECTIVES:

The following objectives are laid out to achieve goals of the course. These objectives are to be achieved by the time the candidate completes the course. The objectives may be considered under the subheadings.

- 1. Knowledge
- 2. Skills
- 3. Human values, ethical practice and communication abilities.

1. Knowledge:

- Recognize the key importance of child health in the context of the health priority of the country
- Practice the speciality of Pediatrics in keeping with the principles of professional ethics
- Identify social, economic, environmental, biological and emotional determinants of child and adolescent health, and institute diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care to children
- Recognize the importance of growth and development as the foundation of Pediatrics; and help each child realize her / his optimal potential in this regard

2. Skills

- Take detailed history, perform full physical examination including neurodevelopment and behavioral assessment and anthropometric measurements in the child and make clinical diagnosis
- Perform relevant investigative and therapeutic procedures for the pediatric patient.
- Interpret important imaging and laboratory results
- Diagnose illness in children based on the analysis of history, physical examination and investigative work up.
- Plan and deliver comprehensive treatment for illness in children using principles of rational drug therapy
- Plan and advise measures for the prevention of childhood disease and disability
- Plan rehabilitation of children suffering from chronic illness and those who are physically and mentally challenged.
- Manage childhood emergencies efficiently
- Provide comprehensive care to normal, 'at risk' and sick neonates
- Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation
- Function as a productive member of a team engaged in health care, research and education.

3. Human values, Ethical practice and Communication abilities

• Adopt ethical principles in all aspects of his/her practice; professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.

- Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.
- Provide leadership and get the best out of his team in a congenial working atmosphere.
- Apply high moral and ethical standard while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed,
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

III. COURSE CONTENTS:

I) Theory

Sl. No

The Field of Pediatrics

- 1 Evaluating Medical Literature and Critical appraisal of Journal articles
- 2 Overview of Child Health
- 3 The Normal Child
- 4 Preventive and Social Pediatrics
- 5 Traditions and Cultural Issues pertaining to Child Care
- 6 Epidemiology, statistics and Research Methodology.
- 7 Ethical Issues in Pediatrics

Growth and Development

- 1 IQ assessment
- 2 Fetal growth and development
- 3 The newborn
- 4 Infant, Preschool age, School age, and Adolescent growth
- 5 Assessment of Growth

- 6 Developmental Assessment
- 7 Standards / Nomograms (including Indian)
- 8 Approach to short stature
- 9 Approach / management of obesity
- 10 Approach / management of under nutrition
- 11 Approach / management of failure to thrive
- 12 Approach / management of developmental delay, regression of milestones

Psychological Disorders

- 1 Assessment and Interviewing
- 2 Vegetative Disorders-Rumination, Pica, Enuresis, Encopresis, Sleep Disorders
- 3 Habit Disorders
- 4 Anxiety Disorders
- 5 Attention deficit and Hyperactivity Disorders
- 6 Psychosomatic Illness
- 7 Autism
- 8 Neurodevelopmental dysfunction in School age child
- 9 Learning disorders

Social Issues

- 1 Street Child
- 2 Child rights and protection
- 3 Child labour
- 4 Abuse and Neglect
- 5 Adoption
- 6 Child Care

- 7 Separation, death, Suicide
- 8 Media (TV, Movies) and its effect on the child

Children With Special Needs

- 1 Care of Child with fatal illness
- 2 Failure to thrive- Problems, Approach and Evaluation
- 3 Developmental disabilities, Chronic Illness
- 4 Mentally and physically challenged children Problems, Approach, Evaluation and Management
- 5 Children in Poverty

Nutrition

- 1 Nutritional Requirements- Water, Energy, Proteins, Carbohydrates, Fats, Minerals, and Vitamins
- 2 Diet/Nutritional Evaluation
- 3 Diet for later childhood and adolescent
- 4 Infant and Young Child Feeding
- 5 Breast Milk Feeding, Human Lactation Management, BFHI
- 6 Nutrition Values of Indian Foods, Recipes.
- 7 Complimentary Feeding
- 8 Feeding through 1st and 2nd Years
- 9 Nutritional disorders Including Obesity
- 10 Protein energy Malnutrition
- 11 Vitamin Deficiencies and Excess
- 12 Micro nutrient Malnutrition
- 13 Nutrition in Low Birth Weight and Premature Babies
- 14 Nutrition in Special situations- PEM, Chronic Illness, Surgery, Critically ill child

Patho-physiology of Body Fluids and Fluid therapy (Approach and management)

- 1 Physiology of Fluids, Electrolytes and Acid Bases
- 2 Dehydration and fluid management
- 3 Dyselectrolytemia
- 4 Approach and Management of dyselectrolytemia and acid base abnormalities
- 5 Special situations Burns, Renal failure, CNS disorders, Pyloric stenosis, Perioperative state and endocrine disorders

Acutely III Child (Approach and management)

- 1 Evaluation in Emergency Room
- 2 Injury control
- 3 Emergency Medical Services
- 4 Paediatric Critical Care-Respiratory Failure and Ventilation Circulatory Failure and Shock Acute Neurological Dysfunction Resuscitation – Basic and Advanced NRP, HBB, PALS, BLS Post resuscitation stabilization Cold / Heat Injury
- 5 Transportation of Sick child / Neonate
- 6 Post-operative supportive care.
- 7 Basics of Pre Anesthesia check up
- 8 Equipments for Level II Intensive Care

Emergencies / Critical Care Pediatrics

- 1 Fluid abnormalities
- 2 Electrolyte abnormalities
- 3 Thermoregulation problems
- 4 Acute Kidney Injury
- 5 Hypertensive crisis

- 6 Congestive Cardiac failure
- 7 Cardiogenic shock
- 8 Pericardial tamponade
- 9 Cyanotic spells
- 10 Vomiting and Diarrhoea
- 11 GI Bleeding Hematemesis, Melena, Hematochezia
- 12 Adrenal Crisis
- 13 Metabolic problems Acid base abnormalities, Hypoglycemia, Hypocalcemia
- 14 Septicemic shock, Viral infections and shock
- 15 Pneumothorax, empyema, pleural effusion, massive ascitis
- 16 Severe Anemia, Bleeding child, Neutropenia
- 17 Pain management, Drug therapy
- 18 ARDS
- 19 Respiratory Failure
- 20 Burns / electrocution
- 21 Animal Bites
- 22 Sickle cell crisis, severe complicated malaria
- 23 Acute severe asthma, Bronchiolitis
- 24 Status epilepticus
- 25 Febrile seizure
- 26 Coma, Increased intra-cranial pressure
- 27 Cardiopulmonary resuscitation
- 28 Shock
- 29 Upper airway obstruction

- 30 Near drowning
- 31 Poisoning
- 32 Snake bite
- 33 Scorpion sting
- 34 Physical abuse
- 35 Sexual abuse
- 36 Diabetic ketoacidosis
- 37 Dengue Hemorrhagic Fever and Dengue shock syndrome
- 38 Acute meningitis and encephalitis
- 39 Hepatic encephalopathy

Human Genetics

- 1 Inheritance Patterns
- 2 Chromosomal clinical abnormalities
- 3 Dysmorphism
- 4 Genetic Counseling
- 5 Human Genome Project
- 6 Gene therapy

Metabolic Disorders (Approach and Management)

- 1 Approach to IEM
- 2 Hypoglycemia
- 3 Common disorders of carbohydrate, amino acid and lipid metabolism
- 4 Mucopolysaccharidosis

Fetus and Newborn

1 Mortality and morbidity

- 2 Organization of level I and II newborn care
- 3 Newborn-history, examination, routine delivery care, nursery care, infantmother bonding
- 4 High risk pregnancies
- 5 Dysmorphology
- 6 Fetus: Fetal distress, Maternal diseases and fetus, Maternal medications/toxin exposure and fetus.
- 7 High risk infant: Multiple pregnancies, Premature and IUGR baby, Post-term baby, Large for gestational age baby.
- 8 Congenital anomalies/malformations Recognition and Referral
- 9 Antenatal diagnosis / Treatment
- 10 Birth injuries
- 11 CNS disorders
- 12 Normal Newborn
- 13 Common problems in a normal newborn
- 14 Delivery room emergencies
- 15 Respiratory disorders
- 16 PPHN
- 17 Oxygen therapy/toxicity
- 18 Basics of Ventilation
- 19 GI problems including NEC
- 20 Hyperbilirubinemia
- 21 Cardiac problems
- 22 Blood disorders: Polycythemia, Anaemia, Hemorrhagic disease of newborn, Hemolytic disease of newborn, Bleeding in newborn.

- 23 Metabolic disorders
- 24 Endocrine disorders: IDM,CAH-Recognition and Referral
- 25 Genitourinary disturbances
- 26 Ambiguous genitalia: Recognition and Referral
- 27 Fluid and electrolytes therapy in Newborn
- 28 Nutrition and feeding the newborn term/preterm/IUGR
- 29 Neonatal transport
- 30 Surgical problems: Recognition and referral
- 31 Thermoregulation
- 32 Neonatal follow-up

Neonatal Infections (Approach and Management)

- 1 Epidemiology
- 2 Intrauterine infections
- 3 Viral infections
- 4 Neonatal sepsis / meningitis
- 5 Pneumonia
- 6 UTI
- 7 Hepatitis
- 8 Nosocomial
- 9 Septic arthritis and osteomyelitis
- 10 Superficial infections
- 11 Universal precautions
- 12 Prevention of infections
- 13 Therapy antimicrobials, adjuvants

Adolescent Health

- 1 Epidemiology
- 2 Sexual development and SMR stages
- 3 Delivery of health care
- 4 Menstrual problems: Recognition and referral
- 5 Sexually transmitted diseases
- 6 Nutritional disorders
- 7 Growth and development
- 8 Pregnancy
- 9 Contraception
- 10 Psychosocial disorders

Immune System

- 1 Basics of Immunology
- 2 Approach to immunodeficiency
- 3 HIV infection

Allergic Disorders

- 1 Allergy and its Immunological basis
- 2 Diagnosis
- 3 Principles of therapy
- 4 Allergic Rhinitis
- 5 Asthma
- 6 Atopic dermatitis
- 7 Urticaria, Angioedema
- 8 Anaphylaxis

- 9 Serum sickness
- 10 Adverse drug reactions
- 11 Adverse food reactions
- 12 Insect allergy
- 13 Ocular allergy

Rheumatology

- 1 Autoimmunity
- 2 Laboratory evaluation
- 3 JRA
- 4 SLE and other Vasculitis
- 5 Erythema Nodosum

Infectious Diseases (Approach and Management)

- 1 Fever
- 2 Clinical use of Microbiology Laboratory
- 3 Fever without a focus
- 4 Septicemia and Shock
- 5 CNS Infections
- 6 Pneumonia
- 7 Gastroenteritis
- 8 Osteomyelitis, Septic arthritis
- 9 Infections in compromised host
- 10 Bacterial Infections
- 11 Anaerobic infections
- 12 Viral infections

- 13 Mycotic infections: Candidiasis Aspergillosis
- 14 Parastitic infections: Helminthiasis
- 15 Protozoal infections: Malaria, Kala azar, Leishmania, Giardiasis, Amoebiasis
- 16 Antiparastitic drugs
- 17 Antimicrobials
- 18 Antiviral drugs, interferon
- 19 Preventive measures: Health advice for travellers, Infection control
- 20 Emerging infections Dengue, Chikungunya, Rickettsial
- Immunization:
 Principles, Schedules, Controversies
 Standard and Optional Vaccines
 Recent advances in Vaccines/Immunisation

Digestive System (Approach and management)

- 1 Normal alimentary tract: Physiology, Anatomy, Development
- 2 Clinical features of GI Disorders
- 3 GI function tests
- 4 Esophagitis, GER, Achalasia
- 5 Ulcer, Acid Peptic disease, GI bleeding
- 6 Malrotation, Obstruction
- 7 Acute pancreatitis
- 8 Disorders of Liver and biliary system: Acute Hepatitis, Chronic Hepatitis, Cirrhosis, Metabolic Liver Diseases, Cholestatic Liver Disease, Neonatal Hepatitis, Complications of Liver disease – Portal Hypertension, Encephalopathy, Coagulopathy
- 9 Peritonitis
- 10 Approach to Malabsorption

Respiratory System (Approach and Management)

- 1 Development and Physiology
- 2 Pulmonary Function Tests
- 3 Disorders of Upper Respiratory tract
- 4 Disorders of Lower Respiratory Tract
- 5 Pleural disorders
- 6 Chronic Respiratory disease: Interstitial fibrosis, ILD, empyema, lung abscess, bronchiectasis
- 7 Recurrent respiratory Diseases
- 8 Basic Indications of ventilation
- 9 Bronchial Asthma
- 10 Foreign body of the airway
- 11 Cystic Fibrosis
- 12 ARI control programme

Cardiovascular System (Approach and Management)

- 1 Development of heart
- 2 Physiology and Pathophysiology of Transitional Circulation (Fetal to Neonatal)
- 3 Investigations Hematology, CXR, ECG, ECHO
- 4 Congenital Heart Disease: Epidemiology Approach to Cyanotic heart disease - Acyanotic heart disease
- 5 Acquired heart disease: Infective Endocarditis, Rheumatic Heart Disease
- 6 Diseases of the Myocardium Myocarditis, Cardiomyopathy
- 7 Diseases of pericardium
- 8 Cardiac Arrhythmia
- 9 Cardiac Therapeutics

Hematology

- 1 Development of Hematopoietic system
- 2 Anaemias: Inadequate Production Nutritional Iron, Folate, B₁₂, Bone Marrow Failure, Hemolytic: Congenital and Acquired
- 3 Pancytopenia
- 4 Blood and component transfusions
- 5 Hemorrhagic disorders (acquired and congenital): Physiology, Bleeding disorders, Coagulation disorders
- 6 Physiology and Disorders of the spleen
- 7 Hypersplenism, splenic trauma, splenectomy

Neoplasms (Approach and Management)

- 1 Principles of diagnosis
- 2 Principles of treatment
- 3 Leukemia
- 4 Lymphomas
- 5 Brain Tumors
- 6 Neuroblastoma
- 7 Liver neoplasm
- 8 Kidney tumors
- 9 Retinoblastoma

Nephrology

- 1 Structure and function of kidney
- 2 Hematuria and conditions
- 3 Proteinuria and conditions

- 4 Evaluation of renal function
- 5 Nephrotic syndrome
- 6 Acute glomerulonephritis
- 7 H.S. Purpura
- 8 HUS
- 9 Tubular disorders RTA
- 10 Renal Failure
- 11 Congenital malformations of the kidney
- 12 Investigations

Urological Disorders (Approach and Management)

- 1 Urinary tract infection
- 2 Vesicoureteral reflux
- 3 Obstructions of urinary tract
- 4 Penis/urethral anomalies
- 5 Urinary lithiasis
- 6 Scrotal anomalies
- 7 Investigations Imaging, Renal function tests

Gynecological Problems

- 1 Normal Menstruation
- 2 Vulvovaginitis
- 3 Menstrual Problems
- 4 Breast Disorders
- 5 A Child with special gyneacological needs
- 6 Developmental anomalies

Endocrine (Approach and Management)

- 1 Physiology and disorders of Puberty Hypothalamus and pituitary: Hyperpituitarism Hypopituitarism - Growth Hormone Diabetes insipidus SIADH
- 2 Thyroid: Thyroid studies, Hypothyroidism, Thyroiditis, Goiter, Hyperthyroidism
- 3 Diabetes Mellitus
- 4 Adrenal Disorders: CAH, Cushing Syndrome, Addisons disease, Adrenal Tumors: Virilizing and Feminizing
- 5 Parathyroid and disorders
- 6 Pheochromocytoma
- 7 Approach to short stature

Nervous System: (Approach and Management)

- 1 Examination and Localization of lesions
- 2 Investigations in CNS disorders
- 3 Congenital anomalies
- 4 Seizures
- 5 Headache
- 6 Coma
- 7 Hydrocephalus, Pseudotumor cerebri, Raised ICT, Microcephaly
- 8 Head Injury
- 9 Acute Stroke
- 10 Brain abscess
- 11 Spinal cord disorders
- 12 SSPE
- 13 Brain death

- 14 Tumors
- 15 Neurocutaneous disorders
- 16 Neurodegenerative disorders Approach (Grey/white matter disorders)\
- 17 Antiepileptic drugs
- 18 Acute Flaccid Paralysis
- 19 Acute Demyelinating Encephalomyelitis
- 20 Approach and Investigation of UMN, LMN, Extrapyramidal, and Cerebellar lesions
- 21 Cerebral Palsy
- 22 Neuroinfections
- 23 Encephalopathies

Neuromuscular (Approach and Management)

- 1 Evaluation and Investigations
- 2 Muscular Dystrophies
- 3 Guillain -Barre Syndrome
- 4 Bell's palsy
- 5 Floppy Infant
- 6 Congenital Myopathy, Myositis
- 7 Neuro muscular transmission and motor neuron abnormalities: Myasthenia Gravis, Spinal muscular atrophy
- 8 Toxic/ nutritional neuropathies

Eye

- 1 Examination of eye and vision
- 2 Abnormalities Refraction and accommodation
- 3 Disorders of Eye movement and alignment

- 4 Diseases of conjunctiva Conjunctivitis
- 5 Diseases of Cornea Clouding/opacities
- 6 Diseases of Lens Cataracts
- 7 Diseases of Optic nerve Papilledema, optic neuritis, optic atrophy
- 8 Eye Injuries
- 9 Vitamin A Deficiency
- 10 Lacrimal problems Dacryocystitis
- 11 Retinopathy of Prematurity
- 12 Visual evoked response

Ear

- 1 Clinical manifestations
- 2 Hearing loss
- 3 Otitis externa
- 4 Otitis Media
- 5 Congenital malformations
- 6 BAER

Skin

- 1 Eczema
- 2 Cutaneous Infections Bacterial, Viral, Fungal
- 3 Arthropod bites, infestations
- 4 Leprosy
- 5 Acne
- 6 Nutritional Diseases
- 7 Drug Reactions

- 8 Atopic dermatitis
- 9 Neonatal skin disorders

Bone / Joint

- 1 Evaluation
- 2 Arthritis approach, investigations, Management
- 3 Congenital Dislocation of Hip
- 4 Osteomyelitis
- 5 Septic Arthiritis
- 6 Talipes equinovarus
- 7 Lethal and non-lethal bone dysplasias:

Achondroplasia

Osteopetrosis

Marfan syndrome

Metabolic Bone Diseases

- 1 Bone and Vitamin D
- 2 Rickets Nutritional and non-nutritional

Unclassified Diseases

- 1 SIDS
- 2 Histiocytosis
- 3 Cystic fibrosis

Environmental

- 1 Lead poisoning
- 2 Envenomation
- 3 Mammalian bites

- 4 Common poisonings Organophosphorus, Kerosene, Phenobarbitone, Iron etc.,
- 5. Chemical pollutants

SOCIAL PEDIATRICS

1 Health Statistics and National Programs

Note: Student should refer to the most recent editions of recommended books and Journals.

Topics may be added or deleted depending on the changes in recommended essential textbooks.

- o Organization of Office Practice
 - o Equipment, Documentation, Records, Space and functioning

o Recent Advances in Pediatrics (Last 5 Years)

o Especially with regard to applied clinical common pediatrics problems.

Allied Subjects

Anatomy

Applied Anatomy

Physiology

Applied Physiology with regard to major organ systems

Biochemistry

Biochemical basis of diseases in children – Nutritional, metabolic, etc

Pathology

Pathophsyiology, Pathogenesis and Basic Histo-pathology of diseases in children

Microbiology

Clinical Microbiology as applicable to investigations of diseases in childhoodserology, staining and culture

Pharmacology

Clinical pharmacology, Therapeutics of childhood diseases, Drug interactions, Rational drug therapy and Adverse Drug Reactions,

Community Medicine

Health Care System – structure and function, Health Statistics and National programs

Pediatric Surgery

Recognition and referral of surgical conditions

Radiology

Clinical Indications and Interpretation of X-ray, Ultrasound, CT MRI and other imaging modalities

Legal and Ethical Medicine

Rights and protection of children, Consumer Protection act, Basic Principles of Ethics

ii) Post-graduate Skills

Please note code:

PI – Perform Independently

PA – Perform with assistance

O – Observer

(Number at end of item indicates minimum number of skills)

Psychomotor Skills:

Procedures (All PI)

Clinical History and Physical examination	No upper limit
Human Lactation management (counseling and practical skills)	20
Neonatal resuscitation	30
Pediatric resuscitation	30
Intravenous injections	50
Intravenous cannulation	50
Venesection	02
Surgical dressing	10
Lumbar puncture	50
Test dose	10
Intravenous Infusions	30
Blood transfusions	20
Neonatal Exchange transfusions	05
Phototherapy	20
Universal precautions and infection control	20
Kangaroo Mother Care	10
Arterial Blood Gas (ABG)	25
Central line, CVP	05
Intraosseous Infusion	05
ECG	10
Interpretation (ALL PA)	
Chest X-ray	25
Abdominal X-ray	10
ECG	05
ABG	25
Bone and joint X-ray	05
CT scan Brain and MRI Brain	10
Barium studies	05
IVP,VUR studies	05
Ultrasound abdomen	05
Neurosonogram	05
Communication skills (All PI)	
Clinical History and Physical examination	
Communicating about health and disease	
Communicating about a seriously ill or mentally challenged child	
Communicating death	
Informed consent	
Empathy with a family	
Referral letters, replies	
Discharge summaries	
Death Certificates	
Pre counseling for HIV	
Post counseling for HIV	
Basic Pedagogy sessions – teaching students, adults	

Lectures, bedside clinics, discussions	
Medline search, internet, Computer usage	
List of Observations (O)	
Genetic counseling	02
Classification of diseases	02
BCG Vaccination	10
List of Skills (PA)	<u> </u>
Sedation	05
Analgesia	05
Brain death certification	
Intercostal tube placement with underwater seal	02
Peritoneal dialysis	01
Subdural/ Ventricular tap	02
Bone marrow aspiration, trephine biopsy	05
Pleural tap	10
Paracentesis – diagnostic and therapeutic	10
Mantoux test	20
DPT,OPV,Measles vaccination	20
Sampling for Fluid cultures	10
Liver biopsy	05
Neonatal, Pediatric Partial exchange	05
Respiratory Management (All PI)	
Nebulization	30
Inhalation therapy	10
Oxygen delivery	50
Critically III child (All PI)	
Monitoring a sick child	50
Pulse oximetry	50
Infant feeding tube / Ryles tube, stomach wash	25
Urinary catheterization	05
Restraining a child for a procedure	25
Prognostication	20
Laboratory – Diagnostic (All PI)	
Urine Protein, sugar, Microscopy	10
Peripheral blood smear and Hb% estimation	10
Peripheral blood smear for Malaria	10
Ziehl Nielson staining – sputum, gastric aspirate	10
Gram staining – CSF, pus	10
Stool pH, reducing substances, microscopy	10
KOH smear	02
CSF analysis (cell count)	10

Neonatal tests (All PI)	
Apt test	02
Shake test	02
Clinical Assessment Skills (All PI)	
Clinical History and Physical examination	
Anthropometry	75
Dietary recall-calories and protein estimation	75
Nutritional advice	75
ORS and ORT	25
Gestational assessment	25
Neurological examination of newborn	25
Fundoscopy	20
Otoscopy	10
Examination of external genitalia – male and female	05
Tanner's SMR scales	05
DDST, BDST, TDST	05
Pre-operative assessment	05
Per rectal examination	02

IV. TEACHING AND LEARNING ACTIVITIES:

A) Theoretical Teaching:

- **1.** Lectures: Lectures are to be kept to a minimum. Certain selected topics can be taken as lectures. Lectures may be didactic or integrated.
- 2. Journal Club: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book the relevant details. The presentations would be evaluated using check lists and would carry Weightage for internal assessment. A time table with names of the students and the moderator should be announced in advance.
- **3. Subject Seminar:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the subject with names of the students and the moderator should be announced in advance.
- 4. Case Discussion: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using

check lists and would carry weightage for internal assessment. A timetable for the case presentation with names of the students should be announced in advance.

- 5. Ward Rounds: Ward rounds may be service or teaching rounds.
 - a) Service Rounds: Postgraduate students should do service rounds every day for the care of the patients. Newly admitted patients should be worked up by the post graduate student and presented to the faculty members the following day.
 - b) Teaching Rounds: Every unit should have 'grand rounds' for teaching purpose at the bed side. A diary should be maintained for day-today activities by the post-graduate students.

Entries of (a) and (b) should be made in the Log book.

- 6. Clinico-Pathological Conference: Recommended once a month for all post graduate students. Presentation to be done by rotation. Presentations will be assessed using checklist. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPCs.
- 7. Inter Departmental Meetings: Strongly recommended particularly with departments of Pathology and Radio-Diagnosis at least once a month. These meetings should be attended by post-graduate students and relevant entries must be made in the Log Book.

Pathology: Interesting cases shall be chosen and presented by the postgraduate students and discussed by them as well as the senior staff of Pathology department. The staff of Pathology department would then show the slides and present final diagnosis. In these sessions the advanced immuno – histo - chemical techniques, the burgeoning markers, other recent developments can be discussed.

Radio-diagnosis: Interesting cases and the imaging modalities should be discussed. Emphasis should be given for the radiological differential diagnosis.

8. Mortality Meeting: The mortality meeting should be conducted in the department every month. The post graduate student should prepare the details regarding the cause of death after going through the case records in

detail, and should present during the mortality meeting. The death records will be discussed in detail during this meeting.

- **9. Teaching Skills:** Post-graduate students must teach under graduate students (eg. Medical, Nursing) by taking demonstrations, bedside clinics, tutorials, lectures etc. Assessment is made using a checklist by medical faculty as well as by the students. Record of their participation is to be kept in Log Book. Training of postgraduate students in Educational Science and Technology is recommended.
- **10. Continuing Medical Education Programmes (CME):** Recommended that at least 1 State level CME programme should be attended by each student during the course.
- **11. Conferences:** Attending conference is compulsory. Post-graduate student should attend one national and one state level conference during the course.
- **12. ADVANCED NRP / NALS and PALS, BLS Certification:** Students should undergo certification during course duration to be eligible to appear for final examination.
- **13. Research Activities:** The Post-graduate students to be encouraged to carry out research activities in the department, institution and or community.

B) Clinical / Practical Training:

Core

Pediatrics	-	12 months
Neonatology	-	06 months
Intensive Care / Emergency	-	04 months

Optional Specialties on Rotation (Subjects to availability) - 2 months

Oncology Neurology Pediatric surgery Nephrology Cardiology Clinical Hematology / Pathology Dermatology Pulmonology Gastroenterology Clinical Microbiology Community / Rural Radiology

V. Other Criteria to Fulfill for the Diploma Course:

1. Internal evaluation:

During the course of two years, the department will conduct two tests. One at the end of first year and other at the end of second year. The second test will a preliminary examination which may be held three months before the final examination. The test may include the written papers, Practicals / clinical and viva-voce. Records and marks obtained in such tests will be maintained by the head of the department and will be sent to the University when called for.

Results of all evaluations should be entered into P.G's logbook / diary and departmental file for documentation purposes. Main purpose of periodic examination and accountability is to ensure clinical expertise of students with practical and communication skills and balance broader concept of diagnostic and therapeutic challenges.

2. Maintenance of Log Book:

Every candidate shall maintain a log book/work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any, conducted by the candidate. All the procedures performed by the post graduate students should be entered in the Log book. All the daily activities including the ward rounds and the routine procedures preformed on day to day basis should be entered in the Log book and it should be verified and signed by the faculty member. The Log book shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the University practical/clinical examination.

VI. SCHEME OF EXAMINATION:

Candidates will be allowed to appear for examination only if attendance (Minimum 80%) and internal assessment are satisfactory and dissertation is accepted.

i) Theory: 300 Marks

There shall be three papers, each of three hours duration. Total marks of each paper will be 100. Questions on recent advances may be asked in any or all the papers. The format of each paper will be same as shown below.

Type of Ques	stions	No. of Questions	Marks for each question	Total Marks
Long essay		02	20	40
Short essay		06	10	60
Grand Total				100
Paper I:	Emerge	ency / Critical Pediatr	ics 100 Marks	
	Newbo	orn		
Paper II :	Genera	al Pediatrics I	100 Marks	
	CNS, Miscel Metab	Hematology, Renal, laneous (Paediatric S olic, Immunology etc	CVS, Oncology, Collagen Surgery, Psychiatry, ENT, O	Vascular and phthalmology,
Paper III :	Genera	al Pediatrics II	100 Marks	
	Infection. Respiratory, Endocrine, Gastroenterology, F Ambulatory OPD Pediatrics, Community/social Pediatric and Immunization		, Hepatology, .trics, Nutrition	

Note : The distribution of chapters/topics shown against the papers are suggestive only and may overlap or change.

B. Clinical Examination: 300 Marks

Types of Cases	No. of Cases	Marks
Long Case	1	100
Short Case	1	50
Newborn	1	50
Total	3	200

C. Viva- Voce Examination: 100 Marks

Aims: To elicit candidate's knowledge and investigative/ therapeutic skills.

1) Viva-voce examination – [100 Marks]

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents. In addition candidates may be given case reports, ABG, gross specimens, histo-pathology slides, X-rays, ultrasound, CT scan images, scan images, etc., for interpretation and questions on these as well as use of instruments will be asked. Student's knowledge on use of instruments and drugs will also be evaluated during viva-voce examination.

D. Maximum Marks:

Maximum marks for	Theory	Practical	Viva	Grand Total
Diploma (Subject)	300	200	100	600

Sr. No.	Name of the Textbook	Authors	Publisher
1	Nelson's Textbook of Paediatrics,	Behrman, Kleigman,	Elsevier
		Jenson	
2	IAP Guide book of Immunization	Nitin K. Shah	Jaypee Brothers
3	Cloherty Manual of Neonatal Care	Cloherty J. P., Stark.	Lippincott Raven
		Ann	
4	Care of the Newborn	Singh M.	Sagar Publication
5	O.P. Ghai Essential pediatrics	O. P. Ghai, Piyush	CBS Publisher and Distributors
		Gupta, V K Paul	
6	Pediatrics Clinical methods	Singh M.	Sagar Publication
7	Hutchison clinical methods	Michael Swash	Saunders
8	Principles of Pediatric and	A Parathsarthy, H P S	Jaypee publication
	Neonatal Emergencies	Sachadev	
9	Illingworth Normal child	Illingworth R. S.,	Churchill Livingstone
10	Illingworth Development of the	Illingworth R. S.,	Churchill Livingstone
	child and infant.		
11	IAP Text book of Paediatrics	A Parathsarthy,	Jaypee publication

VII. RECOMMENDED BOOKS (Latest editions):

References

SI. No.	Name of the Book	Author	Publisher
1	Rudolph's Pediatrics	Colin D Rudolph,	Mc Graw Hill
		Abraham Rudolph	
2	Forfar and Arneil's Textbook of	Neil Mc Intosh,	Churchill Livingstone
	Pediatrics	Roselind Smyth, Peter	
		Helms	
3	Oski's Pediatrics: Principles and	Frank A. Oski, Julia A.	Wolter Kluwer Company
	Practice	McMillan, Catherine D.	
		DeAngelis, Joseph B.	
		Warshaw	
4	Avery's Disease of the Newborn	Taeush, Ballard,	Elsevier
		Gleason	
5	Roberton's Text book of	Janet M. Rennie	Elsevier
	Neonatology		
6	Guha's Textbook of Neonatology	Guha D K	Jaypee brothers
7	Nada's Pediatric Cardiology	James E Lock, Donald C	Elsevier
		Fielar, F Keane	
8	Perloff's Approach to congenital	Joseph K Perloff, John S	Harcourt Brace & Company ,
	Heart Disease	Child,	W B Saunders Co.
9	Harriet Lane pediatric clinical	Jason Robertson, Nicole	Elsevier
	manual	Shilkofski	
10	Blood diseases of Infancy and	Dennis R Miller's,	Saunders/ Elsevier
	Childhood	Robert L B, Linda Patrica	
		Miller	
11	Clinical Hematology in Medical	D C DeGruchy's, F	Churchill Livingstone
	Practice	Firkin	
12	Pediatric Nephrology	Holliday, M.A.; Barrett,	Williams and Wilkins
		Avner, E.D.	
13	Caffey's Pediatric X-ray diagnosis	Jerald P. Kuhn, Thomas	Mosby
		L. Slovis, Jack O Haller	
14	Protein Energy Malnutrition	Alleyne, G A O	Edward Arnold
15	Tuberculosis in Children	Miller F J W	Churchill Livingstone
16	Essentials of Tuberculosis in	Vimlesh Seth, S K Kabra	Jaypee Brothers
	Children		
17	Swenson's Pediatric Surgery	Orvar Swenson	Appleton-Century Crofts
			(Education Division)
18	Text book of Pediatric Infectious	Ralph D Feigin, James D	Saunders
	diseases	Cherry, Gail J Dammlor,	
		Sheidon L Kaplan,	
19	Fenichel's Pediatric Neurology	Fenichel G M	Saunders / Elsevier
20	Kendig's Kespiratory Diseases in	Victor Chernic, Thomas	Saunders
	Pediatrics	Boat, Kobert Wilmott,	
		Andrew Bush	
21	LIVER Disorders in Childhood	Alex P Mowat	Butterworth and Co

22	Roger's Pediatric Critical Care	Mark C Roger, Mark A Helfaer	William & Wilkins
23	Smith's Recognisable patterns of Human Malformations	Kenneth Lyons Jones	Saunders / Elsevier
24	Swaiman's textbook of pediatric neurology	Kenneth F Swaiman, Stephen Ashwal	Mosby
25	Practical pediatric nutrition	Elizebeth M E	Poskitt

VIII. RECOMMENDED JOURNALS:

Sr. No.	Name of the Journal
1	Indian Pediatrics
2	Indian Journal of Pediatrics
3	Pediatric Clinics of North America
4	New England Journal of Medicine
5	LANCET
6	British Medical Journal
7	Journal of Pediatrics
8	Archives Diseases of Childhood and Adolescence
9	Pediatrics
10	Clinics in Perinatology
11	Seminars in Neonatology
12	Tropical pediatrics
13	Journal of Neonatology – National Neonatology forum of India

Reference Series:

SI. No.	Name of the Book	Author	Publisher
1	Suraj Gupta's Recent Advances in Pediatrics	Suraj Gupte	Jaypee Brothers
2	David's Recent Advances in Pediatrics	David T J	Churchill Living Stone
3	Year book of Pediatrics	Stockman J A	Mosby

Note: Student should refer to the most recent editions of Text Books and Journals.

POST GRADUATE DIPLOMA COURSE IN RADIO- DIAGNOSIS (DMRD)

The Radiodiagnosis course is to orient the students on various aspects of imageology by way of theory and practical training in the diseases of various systems of the human body. They should be able to apply knowledge and skills at secondary and tertiary levels of medical care. The postgraduate training course would be to train a MBBS doctor who will:

I. GOALS

- Practice efficiently and effectively the speciality, backed by scientific knowledge and skill base.
- Exercise empathy and a caring attitude and maintain high ethical standards.
- Continue to evince keen interest in continuing education in the Speciality.
- Be a motivated 'teacher'- defined as specialist keen to share his knowledge and skill with a colleague or a junior or any learner.

II. OBJECTIVES

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The objectives may be considered under the subheadings.

- 1. Knowledge
- 2. Skills
- 3. Human values, ethical practical and communication abilities.

1. Knowledge:

- Describe etiology, pathophysiology, principles of diagnosis and management of common problems including emergencies, in adults and children.
- Describe common malignancies in the country and their management including prevention.
- Demonstrate understanding of basic sciences relevant to this speciality

- Identify social, economic, environmental and emotional determinants in given case, and take them onto account for planning therapeutic measures.
- Recognize conditions that may be outside the area of his speciality / competence and to refer them to proper specialist.
- Advise regarding the operative or non-operative management of the case and to carry out this management effectively.
- Update oneself by self study and by attending courses, conferences and seminars relevant to the speciality.
- Undertake audit, use information technology tools and carry out research both basic and clinical, with the aim of publishing his work and presenting his work at various scientific fora.

2. Skills:

- Take a proper clinical history, examine the patient, perform essential diagnostic procedures and order relevant tests and interpret them to come to a reasonable diagnosis about the condition.
- Provide basic and advanced life saving support services (BLS& ALS) in emergency situations.
- Undertake complete patient monitoring including the care of the patient.

3. Human values, Ethical practice and Communication abilities:

- Adopt ethical principles in all aspects of his/her practice. Professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.
- Provide leadership and get the best out of his team in a congenial working atmosphere.
- Apply high moral and ethical standards while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.

• Respect patient 's rights and privileges including patients right to information and right to seek a second opinion.

4. Optimum patient safety

• The radiology post graduate student should be able to relate the safety measures predominantly to the modality work areas: sonography, CT, MRI, general radiology and fluoroscopy, interventional radiology, breast imaging, and pediatrics imaging.

• MEASURES TO BE TAKEN BY THE POST GRAUDUATE STUDENT TO ENSURE OPTIMUM PATIENT SAFETY:

- a. Optimize radiation exposure
- b. Accountability for radiation protection by healthcare providers
- c. Provides opportunity for informed discussions between patients and healthcare providers.
- d. Strive to deliver the lowest dose possible to create diagnostic-quality images and follow the ALARA (as low as reasonably achievable) principle.
- e. Assessing the patient's renal and hepatic function and changing the protocol according to the results.
- f. Timely reporting of critical tests, communication of critical results, medication labeling, hand hygiene, preventing infections, medication reconciliation, reducing harm from falls, and performing universal protocols for preventing surgery that involves the wrong site, the wrong procedure, or the wrong person
- g. Critical tests & examinations that are so critical that, regardless of the findings, a telephone or face-to-face report is communicated within a predetermined time.
- h. Radiographic studies should be labeled with the correct patient identification and right or left markers before the patient begins the radiologic examination to avoid unnecessary radiation exposure and unnecessary administration of IV contrast material.
- i. Perform medication reconciliation by examining the list of the patient's current medications and ensuring that any medication that would be administered within the radiology department will not result in an adverse event for the patient.

5. Breaking bad news

In every area of clinical practice, it is always difficult and awkward to break bad news to a patient, whether at the time of diagnosis, recurrence, disease progression. Bad news is defined as "any news that adversely and seriously affects an individual's view of his or her future." In our department we follow the SPIKES protocol for breaking the bad news.

- S = SETUP. Set up the situation so it has a good chance of going smoothly. Turn your pager off or give it to someone else so you are not interrupted. Sit down, make eye contact, and get reasonably close to the patient. Anticipate that the patient will be upset and have some tissues ready.
- P = PERCEPTION. Find out the patient's perception of the medical situation. What has he been told about the disease? What are his expectations of treatment? Correct any misconceptions or misunderstandings the patient may have.
- I = INVITATION. Find out how much information the patient wants. These days most patients want a lot of information but this is not universally true, especially as the disease progresses and patients may want to focus on "What do we do next?"
- K = KNOWLEDGE. Use language that matches the patient's level of education. Be direct. Give a warning that bad news is coming: "I have some serious news to tell you." This will allow the patient to prepare psychologically. After giving the news, stay quiet for at least 10-15 seconds-resist the urge to tell the patient how to feel. Give the patient time to absorb the information and respond.
- E = EMPATHIZE. Use empathic statements to respond to patient emotions. This will assist in patient recovery and dampen the psychological isolation which the patient experiences when they hear the bad news. If a patient begins to cry, wait until he is ready to talk; Ask if the patient has questions or concerns and keep asking until he says "no."
- S = SUMMARIZE AND STRATEGIZE. Summarize the clinical information and make a plan for the next step, which may be further testing or discussion of treatment options. Be as concrete as possible and check on the patient's understanding of what has been discussed.

III. Course contents.

i) Theory:

1. Basic Sciences (Radiation physics and Radiobiology), Newer imaging techniques, Radiological anatomy, physiology and Radiography ,including fundamentals in electricity and electro magnetic induction, ammeter, voltmeter and galvanometer, transformers, rectifiers, timers, x-ray production and other aspects of x-rays. Electro magnetic radiation, units of radiation, interaction, x-ray film, intensifying screens and other x-ray appliances, dark room procedures etc. IITV and cine fluorography, tomography ,radioactive isotopes and uses, instrumentation in nuclear medicine, MMR and radiation protection.

Radiological anatomy, physiology and pathology of different systems of the body and radiographic techniques concerned to each system.

Physics of ultrasound, CT and MRI.

Basics of Nuclear medicine, PET & SPECT.

2) Respiratory system:

Includes the following methods of investigations and interpretation of chest films, chest wall, diaphragm, pleural disease and air way disease, pulmonary vasculature, pulmonary infections, pulmonary neoplasms, diffuse lung disease, mediastinal disease, chest trauma, post operative lung and intensive care.

- 3) Alimentary & Hepatobiliary system:
 - a) alimentary system- Congenital anomalies of GI tract, diseases and disorders of mouth, pharynx, esophagus, stomach small intestine, large intestine, disease of omentum and mesentery acute abdomen, abdominal trauma, newer methods like Isotopes study, CTand MRI.
 - b) Hepatobiliary system- Disease and disorders, newer methods of imaging hepatobiliary and pancreatic system like, Isotopes study, ultrasonography, arteriography, spiral CTand MRI.
- 4) Head and neck, spinal column and skull:

Includes radiological dimension and imaging of various diseases and disorders of the above system. Investigative procedures of congenital lesions, vascular lesions, infective lesions, metabolic lesions, traumatic lesions and neoplasia of the central nervous system including plain film, arteriography, CTand MRI,.

Disease and disorders of spinal cord lesions including congenital lesions.
5) Cardiovascular system:

Role of radiological imaging by different techniques including DSA and interventional procedures.

Diseases and disorders of cardiovascular system including congenital conditions and the role of imaging by conventional , ultrasound, echo, doppler, CT, MRI, angio, DSA and radio nuclide studies.

6) Endocrinal system:

Imaging of disorders, disease and congenital conditions of endocrinal glands pituitary, adrenal, thyroid, Para thyroid and pancreas.

Newer methods of imaging including embolisation.

7) Genito Urinary system:

Imaging – conventional, ultrasound, CT and MRI of various disease and disorders including congenital conditions of Genito urinary system.

Role of interventional imaging.

8) Musculo Skeletal system:

Role of conventional, ultrasound, radio nuclide studies, CT and MRI of disease, disorders and congenital conditions of muscles, soft tissue, bones and joints.

9) Soft tissue Radiology:

Include various soft tissue disorders and diseases and role of imaging.

10) Interventional radiology:

Includes all procedures like interventional imaging and interventional treatment including CT and USG guided biopsy and FNAC, angioplasty, Aneurysmal coiling, stenting and embolization etc.

11) Recent trends and Advances

Includes all imaging information that is published in national and International Journals and references, vascular Ultrasound, Mammography, PACS, digital x-rays, CT, MRI and Nuclear medicine, PET CT.

ii) Clinical / Practical

The training of postgraduate for diploma shall be residency pattern 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 should take part in seminars, group discussions, grand rounds, case demonstration, clinics, journal review meetings, clinico pathologic correlation and clinical meetings. Every candidate should be required to participate in the teaching and training programme of undergraduate students. Training should include involvement in laboratory and experimental work, and research studies.

IV. Teaching and Learning Activities

A) Theoretical Teaching:

- 1. Lectures: Lectures are to be kept to a minimum, certain selected topic can be taken as lectures. Lectures may be didactic or integrated.
- 2. Journal Club: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the logbook with relevant details. The presentations would be evaluated using checklists and would carry weightage for internal assessment. A time table with names of the students and the moderator should be announced in advance.
- 3. Subject seminar: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the logbook with relevant details. The presentations would be evaluated using checklists and would carry weightage for internal assessment. A time table with names of the students and the moderator should be announced in advance.
- 4. **Case discussion:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the logbook with relevant details. The presentations would be evaluated using checklists and would carry weightage for internal assessment. A time table with names of the students and the moderator should be announced in advance.
- 5. Ward round: ward round may be service or teaching round. Service round: postgraduate students should do service round every day for the care of the patient. Newly admitted patients should be worked up by the post graduate student and presented to the faculty members the following day.

Teaching round: Every unit should have 'grand rounds' for teaching purpose at the bed side. A diary should be maintained for day-to- day activities by the post- graduate students. Entries of (A) and (B) should be made in the log book.

6. Clinico Pathological conference:

Recommended once a month for all post gradute students. Presentation to be done by rotation. Presentations will be assessed using checklist. If cases are not available due to lack of clinical postmortems, it could be supplemented by published Clinico Pathological Correlation (CPCs) carry weightage for internal assessment. A time table with names of the students and the moderator should be announced in advance.

- 7. Inter Departmental Meetings: Strongly recommended particularly with departments of Neurology, Surgery, Orthopedics and Medicine at least once a month. These meetings should be attended by postgraduate students and relevant entries must be made in the logbook.
- 8. Continuing Medical Education Programmes (CME): Recommended that at least 1 state level CME programme should be attended by each student during the course.
- **9. Conferences** :Attending conference is compulsory. Post-graduate student should attend one national and state level conference during the course.
- **10. Research activities:** The Post graduates are to carry out research activities in the department, institution and / or community.

It is mandatory for the diploma students to lither present one paper/poster in a National/State level conference or publish an article in a National/International Journal, So as to make him/her eligible to appear at the postgraduate diploma examination.

B) Clinical / Practical Training

- 1. Rotational posting in other Departments:
 - 1st year : Anatomy

2nd year : Emergency

V) Other Criteria to Fulfill for the Diploma Course

1. Internal evaluation:

During the course of two years the dept will conduct

A. Basic sciences and physics examination of the 1st year PG students at the end of 1st year.

- B. Monthly system wise tests for 2nd year PG students.
- C. One preliminary and one final examination.

The test may include the written papers, practical/ clinical and viva- voce. Records and marks obtained in such tests will be maintained by the head of the department and will be sent to the University when called for.

Results of all evaluations should be entered into PG's logbook / diary and departmental file for documentation purpose. Main purpose of periodic examination and accountability skills and balance broader concept of diagnostic and therapeutic challenges.

2. Maintainence of log book.

Every candidate shall maintain a log book work diary and record his/ her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any, conducted by the candidate. All the procedures performed by the post graduate students should be entered in the log book and it should be verified and signed by the faculty member. The log book shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the University practical, clinical examination.

VI) SCHEME OF EXAMINATION

Candidates will be allowed to appear for examination only if attendance (minimum 80%) and internal assessment are satisfactory.

i) Theory

There shall be three question papers, each of three hours duration. Total marks of each paper will be 100. Questions on recent advances may be asked in any or all the papers. The format of each paper will be same as shown below.

Type of questions	Number of questions	Marks for each questions	Total marks
Long essay questions	02	20	40
Short essay questions	06	10	60
GRAND TOTAL			100

......100 marks

(Basic sciences as applied to Radio-Diagnosis – Radiological Anatomy, Physiology, Pathology, Radiography, Radiation Physics and Biology, Basics of Ultrasound CT, Nuclear Medicine and MRI, Bones & Joints and Respiratory system).

Paper II:

Paper I :

......100 marks

(Gastrointestinal system and abdomen including Pancreas, Adrenals, Biliary tree, Spleen, Liver and acute abdomen, Cardiovascular system including Lymphatic system, Arteriography Phlebography and Interventional procedures).

Paper III:

......100 marks

(Urogenital system including scrotum and Obstetrics and Gynecology. Skull and Central nervous system. ENT, Eyes, Teeth and soft tissues).

Note : the distribution of chapters / topics shown against the papers are suggestive only and may over lap or change.

B.	Clinical Examir	nation	200 marks
	Types of cases		
	1) Long case	1	60 marks
	2) Short cases	2(40x2)	80 marks
	3) Spotters	30x2	60 marks
	Total		200 Marks
C)	Viva voce Exa	mination:	100 marks

Aims: To elicit candidate's knowledge and investigative / therapeutic skills

1. Viva-voce 100 marks

Viva-voce examination-

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents. In addition candidates may be given case reports, gross specimens, histo-pathology slides, X-ray, ultrasound, CT scan images, scan images, etc. for interpretation and questions on these as well as use of

instruments will be asked. Student's knowledge on use of instruments and drugs will also be evaluated during viva-voce examination.

D) Maximum marks:

Maximum marks for Diploma in Radiodiagnosis (DMRD)	Theory	Practical	Viva	Grand Total
///////////////////////////////////////	300	200	100	600

E) Passing Criterion:

To pass the examination the candidate must secure 50% of the marks in each head of theory and practicals separately.

SI. Name of the Book Name of the Publisher No author Churchill 1 Text Book of Radiology and Imaging Vol Sutton 1 & Vol II Livingstone Diagnostic Radiology Vol I, II Churchill 2 Ronald G Livingstone. Grainger Positioning in Radiography Clark CBS 3 4 Ultrasonography in Callen Saunders **Obstetrics & Gynecology** 5 Radiographic Anatomy Butler Cambridge W.B.Saunders Principles of nuclear medicine Wagner 6 Diagnostic Radiology CT & MRI of 7 Haaga MOSBY whole body Vol.I & II. Pediatric x-ray diagnostic vol. 1 & II Churchill 8 Caffey's Livingstone. 9 Skeletal Radiology Lippincott Yochum Chest Radiology Fraser & Muller 10 Saunders (Synopsis) 11 Alimentary Tract and Imaging Gore Saunders Kaplan 12 MSK Radiology Saunders Diagnostic Ultrasound Vol. I & II 13 C.Rumack, Elsevier. 14 Christensen's Physics of Diagnostic Curry T.S. & Lea & febiger Radiology Dowdey J.E., 15 Pediatric x-ray diagnostic vol.1& II Caffey's, Churchill Livingstone. 16 Colour Doppler Zwiebel Elsevier Churchill Allen Livingstone.

VII. RECOMMENDED BOOKS (latest editions):

17	Radiological Procedures	Bhushan Lakhkar	Avichal
		Whitehouse	Blackwell
18	Diagnostic Ultrasound Vol. I & II	Cosgrove,	Churchill
			Livingstone.
19	Diagnostic Radiology CT & MRI whole	Lee & Sagel,	Ubran
	body Vol I & II		Schwarzenberg
20	Text book of Neuro imaging	Osborn,	MOSBY.
21	Radiology review Manual (Differentials)	Dahnert	Lippincott
22	Handbook of interventional radiology	Krishna Kandrapa	Barnes & noble

VIII. RECOMMENDED JOURNALS

1)	Indian Journal of Radiology and Imaging
2)	Clinical Radiology
3)	British Journal of Radiology
4)	American Journal of Roentgenology
5)	Radiology clinics in North America
6)	Recent Advances in Radiology and Imaging
7)	Text book of Radiology
8)	Lancet
9)	Journal of Diagnostic Medical Sonography
10)	Seminar in Ultrasound
11)	Clinical Nuclear Medicine
12)	Journal of Vascular and Interventional Radiology
13)	Journal of computer assisted Tomography.
14)	Radiographics & Radiology (RSNA)
15)	American Journal of Neuroradiology

POST GRADUATE DIPLOMA COURSE IN OBSTETRICS AND GYNAECOLOGY(DGO)

I. GOALS:

The goal of the post graduate degree course in Obstetrics and Gynaecology shall be to train the student to acquire competencies pertaining to Obstetrics and Gynaecology that are required to practice at all levels of health system in the community and globally.

II. OBJECTIVES:

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The objectives may be considered under the sub headings.

- 1. Knowledge.
- 2. Skills.
- 3. Human values, ethical practice and communication abilities.

1. Knowledge:

- Shall have knowledge of the basic and advanced principles of Obstetrics and Gynaecology.
- Shall be aware of the contemporary advances and developments in medical sciences as related to Obstetrics and Gynaecology.
- Have knowledge of the basic principles of anesthesiology and resuscitation measures.
- Shall be oriented to principles of research methodology.

2. Skills

- Shall provide quality care to the women in the diagnosis and management of antenatal, intranatal& postnatal period of normal and abnormal pregnancy.
- Shall provide effective & adequate obstetrical care including emergencies and immediate management of the newborn.
- Shall manage common gynaecological problems & emergencies.

- Shall develop adequate surgical skills to manage common obstetrical &gynaecological problems.
- Shall provide counseling and delivery of fertility regulation methods and perform medical termination of pregnancy.
- Shall develop adequate skills to perform and interpret basic obstetrical and gynaecological ultrasonography.
- Shall organize and implement the "National Health Programs" pertaining to women's health.
- Shall acquire skills in educating medical and paramedical professionals including the society.
- Shall keep abreast with advances in the field of Obstetrics & Gynaecology.

3. Human values, Ethical practice and Communication abilities

- Adopt ethical principles in all aspects of his/her practice; professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.
- Provide leadership and get the best out of his team in a congenial working atmosphere.
- Apply high moral and ethical standard while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.
- Properly maintain medical records and know the medico legal aspects and acts pertaining to obstetrical &gynaecological practice.
- Be familiar with modern methods of teaching, develop communication skills and demonstrate compassionate attitude towards the patients.

III. COURSE CONTENTS:

1) Theory

i. Basic Sciences and medical genetics

- Normal & abnormal development, structure and function of urogenital system and female breast.
- Applied anatomy of genito-urinary system, abdomen, pelvis, pelvic floor, anterior abdominal wall and upper thigh (inguinal ligament, inguinal canal, vulva, rectum and anal canal).
- Physiology of spermatogenesis.
- Endocrinology related to male and female reproduction.
- Anatomy & physiology of urinary & lower GI Tract (rectum & anal canal), development, structure & function of placenta, umbilical cord & amniotic fluid.
- Anatomical & physiological changes in female genital tract during pregnancy.
- Anatomy of fetus, fetal growth & development, fetal physiology & fetal cir-culation.
- Physiological &neuro-endocrinal changes during puberty, adolescence, menstruation, ovulation, fertilization, climacteric & menopause.
- Biochemical and endocrine changes during pregnancy, including systemic changes in cardiovascular, hematological, renal, hepatic and other systems.
- Biophysical and biochemical changes in uterus and cervix during pregnancy &labour.
- Pharmacology of drugs used during pregnancy, labour postpartum period, with reference to their absorption, distribution, excretion, hepatic metabolism, transfer of the drugs across the placenta, effect of the drugs used in labour, on fetus & their excretion through breast milk.
- Mechanism of action, metabolism & excretion of drugs used in the management of gynaecological disorder.

- Role of hormones in Obstetrics & Gynaecology.
- Markers in Obstetrics & Gynaecology –non-neoplastic and neoplastic diseases
- Pathophysiology of ovaries, fallopian tubes, uterus, cervix, vagina and ex-ternal genitalia in healthy and diseased conditions.
- Normal and abnormal placenta, umbilical cord, amniotic fluid and fetus.
- Normal and abnormal microbiology of genital tract. Bacterial, viral & para-sitical infections responsible for maternal, fetal and gynaecological disor-ders.
- Humoral and cellular immunology in Obstetrics & Gynaecology.
- Gametogenesis, fertilization, implantation & early development of embryo.
- Normal pregnancy, physiological changes during pregnancy, labour&puerperium.
- Immunology of pregnancy.
- Lactation physiology & pathology.

Basic medical genetics including cytogenetics.

- Pattern of inheritance
- Chromosomal abnormalities types, incidence, diagnosis, management and recurrence risk. -
- General principles of teratology.
- Screening, counseling and prevention of developmental abnormalities.
- Birth defects genetics, teratology & counseling.

ii. Obstetrics including new born care

- Prenatal care of normal pregnancy including examination, nutrition, immunization & follow up.
- Identification and management of complicated & high risk pregnancies abortion, ectopic pregnancy, gestational trophoblastic

diseases, hyperemesis gravidarum, multiple pregnancy, antepartum hemorrhage, pregnancy induced hypertension (pre-eclampsia, eclampsia, other associated hypertensive disorders), anemia, Rhincompatibility, diabetes, heart disease, renal & hepatic diseases, preterm labour, premature rupture of membranes, post term pregnancy, recurrent pregnancy loss & intrauterine fetal growth restriction.

- Neurological, hematological, dermatological diseases, immunological disorders and other medical & surgical disorders associated with pregnancy including acute abdomen (surgical emergencies appendicitis & GI emergencies), hydramnios&oligamnios.
- Diagnosis of contracted pelvis / CPD and its management.
- Evaluation of fetal & maternal health in complicated pregnancies by making use of diagnostic modalities including USG, doppler, elec-tronic fetal monitors and plan for safe delivery for mother and fetus, identifying fetus at risk & its management.
- Infections in pregnancy (bacterial, viral, fungal, protozoal)
 - o Malaria, toxoplasmosis.
 - o Viral-rubella, CMV, Herpes, HIV, viral hepatitis(A,B,C etc.,).
 - o Sexually transmitted infections (STD's).
 - o Mother to fetal transmission of infections.
- Identification & management of fetal malpositions and malpresentations.
- Management of pregnancies complicated by gynecological diseases, congenital genital tract developmental anomalies, gynaecological pathologies fibroid uterus, cancer cervix, genital prolapse etc.
- Prenatal diagnosis of fetal abnormalities & fetal therapy.
- MTP and PNDT act.
- National health and MCH programmes, social obstetrics and vital statistics
- Recent advances in Obstetrics.

- Normal labour mechanism & management.
- Partographic monitoring of labour progress, recognition of abnormal labour and its appropriate management.
- Induction and augmentation of labour.
- Identification and conduct of abnormal labour and complicated delivery malpresentations, malpositions, abnormal uterine action, obstructed labour and cervical dystocia.
- Forceps delivery, caesarean section & destructive operations.
- Management of abnormal labour abnormal pelvis, soft tissue abnormali-ties of birth canal.
- Analgesia &anaesthesia in labour.
- Maternal & fetal monitoring in normal & abnormal labour (including elec-tronic fetal monitoring).
- Identification and management of intrapartum complications- cord pre-sentation, cord prolapse, complications of 3rd stage of labour post partum haemorrhage, retained placenta, inversion of uterus & rupture of uterus.
- Complications of 3rd stage of labour management of primary & secondary postpartum hemorrhage, retained placenta, uterine inversion, postpartum collapse and amniotic fluid embolism.
- Identification & management of genital tract trauma perineal tear, cervi-cal/vaginal tears, episiotomy complications & rupture uterus.
- Management of critically ill women.
- Coagulation disorders including DIC & use of blood and blood components/products.
- Postpartum contraception.
- Breast feeding practice, counseling & importance of breast-feeding, prob-lems in breast-feeding and their management, baby friendly practices.
- Problems of newborn at birth (resuscitation) & management of early neonatal problems.

- Normal and abnormal puerperium sepsis, thrombophlebitis, mastitis, psychosis.
- Surgical decision making & technique including management of complications.
- Vaginal instrumental delivery, caesarean section, obstetrics

Hysterectomy, manipulations (External Cephalic Version, Internal Podalic version, manual removal of placenta etc)

- Medical termination of pregnancy- safe abortion, selection of cases, technique and management of complication and MTP Act.
- Care of new born normal and high-risk new born (including NICU care)
- Asphyxia and neonatal resuscitation.
- Neonatal sepsis prevention, detection and management.
- Neonatal hyperbilirubinemia investigations and management
- Birth trauma- detection and management
- Detection and management of neonatal malformations
- Management of common neonatal problems

iii. Gynaecologyincluding family welfare and demography

- Epidemiology and etiopathogenesis of gynaecological disorders.
- Diagnostic modalities and management of common benign and malignant gynaecological diseases :
 - o Fibroid uterus
 - o Endometriosis &adenomyosis
 - o Endometrial hyperplasia
 - o Genital prolapse(uterine & vaginal)
 - o Cervical erosion, cervicitis, cervical polyps, cervical neoplasia.
 - o Vulval and vaginal cysts, infections, benign lesions and intra epithelial neoplasia.

- o Benign ovarian pathology
- o Malignant genital neoplasia of-ovary, fallopian tubes, uterus, cervix, va-gina, vulva, gestational trophoblastic diseases and carcinoma breast
- Diagnosis and surgical management of clinical conditions related to congenital malformations of genital tract, reconstructive surgery in Gynaecology.
- Intersex, ambiguous sex and chromosomal abnormalities.
- Reproductive endocrinology: evaluation of primary & secondary amenorrhoea, man-agement of hyperprolactinemia, hirsutism, chronic anovulation, PCOD, thyroid and other endocrine dysfunctions. -
- Infertility evaluation and management.
- Methods of ovulation induction.
- Tubal (micro) surgery.
- Management of immunological factors of infertility.
- Male infertility.
- Obesity.
- Introductory knowledge of advanced assisted reproductive techniques (ART).
- Reproductive tract infections (syndromic approach) prevention, diagnosis & treatment of:
 - o STD
 - o HIV
 - o Other infections
 - o Genital tuberculosis.
- Principles of radiotherapy and chemotherapy in gynaecological malignancies choice, schedule of administration & complications of such therapies.

- Rational approach in diagnosis and management of endocrinal abnormalities such as: menstrual abnormalities, amenorrhoea (primary/secondary), dysfunctional uterine bleeding, polycystic ovarian disease, hyperprolactinemia (galactorrhoea), hyperandrogenism, thyroid, pituitary and adrenal disorders.
- Urological problems in Gynaecology diagnosis and management.
 - o urinary tract infection
 - o urogenital fistulae
 - o incontinence
 - o other urological problems
- Orthopedic problems in Gynaecology.
- Menopause: management (HRT) and prevention of its complications.
- Endoscopy -laparoscopy and hysteroscopy.
- Recent advances in Gynaecology diagnostic & therapeutic.
- Pediatric, adolescent & geriatric Gynaecology.
- Understanding of social, educational and health needs of adolescent girls & menopausal women, planning and implementation of intervention programmes.
- Education regarding rights and confidentiality of women's health, specifically related to reproductive function, sexuality, contraception and safe abortion.
- Abdominal & vaginal hysterectomy.
- Surgical procedures for genital prolapse, fibromyoma, endometriosis, ovarian, adnexal, uterine, cervical, vaginal and vulval pathology.
- Surgical treatment for urinary & other fistulae, urinary incontinence.
- Operative endoscopy- basics and introduction to advanced operative endoscopic procedures.
- Definition of demography and its importance in Obstetrics and Gynaecology.
- Demography and population dynamics

- Recognize importance of good health of the adolescent and postmenopausal women.
- Identification and management of health problems of postmenopausal women
- Statistics regarding maternal mortality, perinatal mortality/morbidity, birth rate & fertility rate.
- Organizational and operational aspects of National Health Policies & Programs, in relation to population and family welfare including RCH.
- Various temporary and permanent methods of male and female contraception.
- Knowledge of contraceptive techniques (including recent developments).
 - o Temporary methods.
 - o Permanent methods.
 - o Recent advances in contraceptive technology.
- Provide adequate services to service seekers of contraception including follow up.
- Medical termination of pregnancy Act, its implementation, providing safe and adequate services.
- Geriatric problems.
- Epidemiology of RTI and HIV infection in Indian women of reproductive age group, cause, effect and management of these infections.
- HIV infections in pregnancy, its effect and management.
- Relationship of RTI & HIV with gynaecological disorders.
- Planning and implementation of preventive strategies.
- Knowledge and correct application of various Acts and laws while practicing Obstetrics and Gynaecology, particularly MTP act and PNDT act.

- Knowledge about importance of proper recording of facts regarding history, examination findings, investigation reports and treatment administered to all the patients.
- Knowledge of steps recommended for examination and management of rape cases.
- Knowledge of steps taken in the event of death of a patient.
- Concept of safe disposal of human body fluids and other materials.
- Universal precautions need to be taken in examination of the patient and surgical procedures for the prevention of HIV and other diseases.
- Effect of environment on pregnancy outcome.

2) Clinical / Practical Skills

Obstetrics:

- Provide basic antenatal care.
- Identify and manage high risk pregnancy.
- Diagnose normal and abnormal labour.
- Conduct normal delivery.
- Perform episiotomy.
- Diagnose and manage post partum haemorrhage.
- Diagnose and manage other common obstetrical emergencies.
- Obstetric Drills
- Grief counselling and breaking bad news
- Patient safety

Gynaecology:

- Perform per speculum and vaginal examination.
- Diagnose and manage common gynaecological diseases.
- Insertion and removal of IUCD.
- Perform Pap smear, VIA, VILI.

3) Operative Skills:

Essential list of Surgical proceduresto be done INDEPENDENTLY:

OBSTETRICS:

- Conduct normal deliveries.
- Episiotomy and its repair.
- Application of forceps &ventouse (10).
- Carry out caesarean sections (10).
- Manual removal of placenta.
- Management of obstetrical genital tract injuries.
- Postpartum sterilization / minilap tubal ligation (05).
- Medical termination of pregnancy.

GYNAECOLOGY:

- Endometrial / cervical biopsy.
- Dilatation& curettage.
- Vaginal & abdominal hysterectomy.

TO ASSIST SENIOR SPECIALIST / CONSULTANT:

- Operative management of ectopic pregnancy
- Operations for vaginal wall prolapse.
- Laparotomy for ovarian tumours.

TO BE OBSERVED AND/OR ASSIST WHEN POSSIBLE

1. OBSTETRICS :

- Caesarean hysterectomy.
- Internal iliac artery ligation.
- Internal podalic version..

2. GYNAECOLOGY:

- Tubal microsurgery.
- Radical operations for gynaecological malignancies.
- Repair of genital fistulae.
- Operations for incontinence.
- Myomectomy.
- Laparoscopic surgery.
- Hysteroscopic surgery.

Diagnostic procedures:

1. OBSTETRICS:

- Sonographic images at various stages of normal pregnancy, abnormal pregnancy & fetal biophysical profile.
- Fetal surveillance methods electronic fetal monitoring and its interpretation.

2. GYNAECOLOGY:

- Ultrasonographic diagnosis of common gynaecological pathology.
- Interpretation of x-rays hysterosalpingography.
- Pap smear.
- Colposcopy and colposcopic guided procedures.
- Endoscopy laparoscopy & hysteroscopy.

IV. TEACHING AND LEARNING ACTIVITIES:

A) Theoretical Teaching:

- **1.** Lectures: Lectures are to be kept to a minimum. Certain selected topics can be taken as lectures. Lectures may be didactic or integrated.
- 2. Journal Club: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book the relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A

time table with names of the students and the moderator should be announced in advance.

- **3. Subject Seminar:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the subject with names of the students and the moderator should be announced in advance.
- 4. Case Discussion: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the case presentation with names of the students should be announced in advance.
- 5. Ward Rounds: Ward rounds may be service or teaching rounds.
 - a) Service Rounds: Postgraduate students should do service rounds every day for the care of the patients. Newly admitted patients should be worked up by the post graduate student and presented to the faculty members the following day.
 - b) Teaching Rounds: Every unit should have 'grand rounds' for teaching purpose at the bed side. A diary should be maintained for day-to-day activities by the post-graduate students.

Entries of (a) and (b) should be made in the Log book.

- 6. Clinico-Pathological Conference:Recommended once a month for all post graduate students. Presentation to be done by rotation. Presentations will be assessed using checklist. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPCs.
- 7. Inter Departmental Meetings: Strongly recommended particularly with departments of Pathology, Paediatrics and Radio-Diagnosis at least once a month. These meetings should be attended by post-graduate students and relevant entries must be made in the Log Book.

Pathology: Interesting cases shall be chosen and presented by the post-graduate students and discussed by them as well as the senior staff of Pathology department. The staff of Pathology department would then show the slides and present final diagnosis. In these sessions the

advanced immuno-histo-chemical techniques, the burgeoning markers, other recent developments can be discussed.

Paediatrics: Perinatal Mortality meetings will be held once in a month along with Paediatrics staff.

Radio-diagnosis: Interesting cases and the imaging modalities should be discussed. Emphasis should be given for the radiological differential diagnosis.

- 8. Mortality Meeting: The mortality meeting should be conducted in the department whenever there is mortality. The post graduate student should prepare the details regarding the cause of death after going through the case records in detail, and should present during the mortality meeting. The death records will be discussed in detail during this meeting.
- **9. Teaching Skills:** Post-graduate students must teach undergraduate students (eg. Medical, Nursing) by taking demonstrations, bedside clinics, tutorials, lectures etc. Assessment is made using a checklist by medical faculty as well as by the students. Record of their participation is to be kept in Log Book. Training of Postgraduate students in Educational Science and Technology is recommended.
- **10. Continuing Medical Education Programmes (CME):** Recommended that at least 1 state level CME programmes should be attended by each student during the course.
- **11. Conferences:** Attending conference is compulsory. Post-graduate student should attend one national and one state level conference during the course.
- **12. Research Activities:** The Post-graduate students to be encouraged to carry out research activities in the department, institution and or community

B) Clinical / Practical Training:

1. Rotation postings in OBG sub specialities :

Rural posting	- 4 weeks
Preventive Gynae Oncology	- 2 weeks
Assisted Reproductive Centre	- 4 weeks
Ultrasonography	- 4 weeks

2. Ancillary Postings:

Neonatology	- 2 weeks
Critical Care	- 2 weeks
Anaesthesiology	- 1 week
Anatomy	- 1 week

V. OTHER CRITERIA TO BE FULFILLED FOR THE DEGREE COURSE:

1. Internal evaluation:

During the course of two years, the department will conduct two tests. One at the end of first yearand other at the end of second year. The second test will be a preliminary examination which may be held three months before the final examination. The test may include the written papers, practicals / clinicals and viva-voce. Records and marks obtained in such tests will be maintained by the Head of the department and will be sent to the University when called for.

Results of all evaluations should be entered into P.G's logbook/diary and departmental file for documentation purposes. Main purpose of periodic examination and accountability is to ensure clinical expertise of students with practical and communication skills and balance broader concept of diagnostic and therapeutic challenges.

2. Maintenance of Log Book:

Every candidate shall maintain a Log book/work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc., Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any, conducted by the candidate. All the procedures performed by the post graduate students should be entered in the Log book. All the daily activities including the ward rounds and the routine procedures preformed on day to day basis should be entered in the Log book and it should be verified and signed by the faculty member. The Log book shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the University practical/clinical examination.

VI. SCHEME OF EXAMINATION:

Candidates will be allowed to appear for examination only if attendance (Minimum 80%) and internal assessment are satisfactory, dissertation is accepted.

i) Theory: 300 Marks

There shall be three papers, each of three hours duration. Total marks of each paper will be 100. Questions on recent advances may be asked in any or all the papers. The format of each paper will be same as shown below.

Type of Questions	No. of	Marks for each question	Total Marks
	Questions		
Long essay	02	20	40
Short essay	06	10	60
Grand Total			100

PAPER I :100 marks

Basic sciences and medical genetics.

Obstetrics including social obstetrics and diseases of the newborn

PAPER III : 100 marks

Gynaecology

Note : The distribution of chapters/topics shown against the papers are suggestive only and may overlap or change.

B. Clinical Examination: 200 Marks

SI.No.	Type of case	No.of cases	Marks	Total
1)	Obstetrics Long case	1	75	
2)	Obstetrics Short case	1	25	200
3)	Gynaecology Long	1	75	
	case			
4)	Gynaecology Short	1	25	
	case			

C. Viva- Voce Examination: 100 Marks

Aims: To elicit candidate's knowledge and investigative/ therapeutic skills.

1) Viva-voce examination – [100 Marks]

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents. In addition candidates may be given case reports, instruments, gross specimens, histo-pathology slides, X-rays, ultrasound, CT and MRI scan images, etc., for interpretation and questions on these as well as use of instruments will be

asked. Student's knowledge on use of instruments and drugs will also be evaluated during viva-voce examination.

D. Maximum Marks:

Maximum marks for Degree in Obstetrics	Theory	Practical	Viva- voce	Grand Total
&Gynaecology(MS)	300	200	100	600

E. Passing Criterion.

To pass the examination the candidate much secure 50% of the marks in each head of theory and practical separately.

VII. RECOMMENDED BOOKS (LATEST EDITIONS):

SI.	Name of the Textbook	Authors	Publisher
N0.			
1	Practical obstetrics	Ian Donald	B. I. publications
	problems	Editor –RenuMisra	
2	Practical guide to high risk	Editors - Fernando Arias,	Elsevier's publications
	pregnancy & delivery	Shirish. N. Daftary,	
		Amarnath. G .Bhide	
3	Text book of Obstetrics	William's	McGraw Hill publications
4	Manual of Obstetrics	Holland	BIP publications
5	Principles of Gynaecology	Jeffcoate's	Jaypee Publications
		Editors- Pratap Kumar,	
		Narendra Malhotra	
6	Textbook of Gynaecology	Shaw's	Elsevier's publications
7	Textbook of Gynaecology	Dutta	Central publications
8	Textbook of Obstetrics	Dutta	Central publications
9	Practical Gynaecology&	Parulekar	Vora publications
	Obstetrics		
10	Operative obstetrics	Munrokerr's	A.T.B.S. publications
11	Textbook of operative	Shaws	Churchill Livingstone (Elsevier
	gynaecology		publications)
12	Operative Gynaecology	TeLinde's	Lippincott Williams
			andWilkins publications
13	Medical disorders during	Michael De Sweit	Mosby publications
	pregnancy		
14	Obstetrics & Gynaecology	Rathnam	Universities Press Limited
15	The management of labour	Arulkumaran	Orient Longman publications
16	Clinical Gynaecology	Bhaskar Rao	Orient Longman publications
17	Text book of Obstetrics &	C.S.Dawn	Magnohill. publications
	Neonatology		

18	Text book of Gynaecology	C.S.Dawn	B. B. publications
	and contraception		
19	J. Studd	Progress in Obstetrics	E- Aletsky's. publications
		&Gynaecology	
20	Padubidri	Text book of Obstetrics	Elsevier's publications
21	Novak's	Text book of	Lippincott Williams and
		Gynaecology	Wilkins publications
22	Dewhurst	Obstetrics and	Blackwell Science publications
		Gynaecology	
23	Bonney's	Gynaecological surgery	Blackwell Science
			publications
24	Callen	Ultrasonography	C.B.S. publications
25	D.K. James	High risk pregnancy	W. B. Saunders
		management options	(Elsevierpublications).
26	J. Studd	Progress in Obstetrics	E-Aletsky's publications
		and Gynaecology	
27	John Bonnar, William	Recent Advances in	Royal Society of Medicine
	Dunlop & William L	Obstetrics	Press Ltd
	Ledger	&Gynaecology	

VIII. RECOMMENDED JOURNALS:

SI.	Name of the Journal		
No.			
1.	Obstetrics &Gynaecology survey		
2.	Obstetrics & Gynaecology clinics of North America		
3.	Clinical Obstetrics &Gynaecology		
4.	British journal of Obstetrics &Gynaecology		
5.	American journal of Obstetrics &Gynaecology		
6.	Journal of Obstetrics & Gynaecology of India		
7.	Fertility & Sterility		

POSTGRADUATE DIPLOMA COURSE IN OTORHINOLARYNGOLOGY AND HEAD & NECK SURGERY (D L O)

I. GOALS:

The goals of postgraduate training course would be to train a MBBS doctor who will

- Practice efficiently and effectively, backed by scientific knowledge and skill base.
- Practice Evidence Based Medicine (EBM).
- Exercise empathy and a caring attitude and maintain high ethical standards.
- Continue to evince keen interest in continuing education in the speciality irrespective of whether he/she is in a teaching institution or is a practicing surgeon.
- Be a motivated 'teacher' defined as a specialist keen to share his/her knowledge and skills with a colleague or a junior or any learner.

II. OBJECTIVES:

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The objectives may be considered under the subheadings.

- 1. Knowledge
- 2. Skills
- 3. Human values, ethical practice and communication abilities.
- 1. Knowledge:
 - Demonstrate understanding of basic sciences relevant to his/ her specialty.
 - Describe aetiology, pathophysiology, principles of diagnosis and management of common problems including emergencies in children, adults and old.

- Describe indications and methods for fluid and electrolyte replacement therapy including blood transfusion.
- Describe common malignancies in the country and their management including prevention.
- Identify social, economic, environmental and emotional determinants in a given case and take them into account for planning therapeutic measures.
- Recognize conditions that may be outside the area of his /her specialty/ competence and to refer them to the proper specialist.
- Advise regarding the operative or non operative management of the case and to carry out this management effectively.
- Judicial use of available investigations.
- Update himself/ herself by self study and by attending courses, conferences, symposia and seminars relevant to the specialty.
- Teach and guide his /her team, colleagues and other students.
- Undertake audit, use information technology tools and carry out research, both basic and clinical, with the aim of publishing and presenting his/her work at various scientific fora.

2. Skills

- Take a proper clinical history, examine the patient, perform essential diagnostic procedures and order relevant tests and interpret them to come to a reasonable diagnosis about the condition.
- Perform common operative procedures in ENT and Head & Neck.
- Provide basic and advanced life saving support services (BLS&ALS) in emergency situations.
- Undertake complete patient monitoring including the preoperative and post operative care of the patient.
- Tracheostomy as a planned or emergency procedure
- Percutaneous tracheostomy.

- Practice post tracheostomy care.
- Intubation and Extubation skills.

3. Human values, Ethical practice and Communication abilities

- Adopt ethical principles in all aspects of his/her practice; professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.
- Provide leadership and get the best out of his team in a congenial working atmosphere.
- Apply high moral and ethical standard while carrying out human or animal research.
- Be humble and accept the limitations in his / her knowledge and skill and to ask for help from colleagues when needed,
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

III. COURSE CONTENTS:

i) Theory

1. Basic Sciences

Anatomy of the ear/ physiology of hearing and equilibrium / anatomy and physiology of nose and paranasal sinuses / anatomy of pharynx and oesophagus / deglutition / anatomy of larynx and tracheobronchial tree / physiology of respiration/ physiology of reception and generation of speech. Surgical anatomy of skull base / cranial nerves / imaging and radiology pertaining to ear, nose, throat and head & neck / knowledge of immunology and microbiology as regarding ENT and head & neck/ radiotherapy and chemotherapy in head and neck cancers / wound healing / principles of laser surgery / basics of anaesthesia and intensive care in relation to ENT and head & neck / A thorough knowledge of anatomy of head and neck region including thyroid, neck spaces and salivary glands. Radiological Investigations like CT, MRI and PET. Navigational System and Robotic Surgeries in ENT, Sialoendoscopy

2. Audiology

(A)	(B)	(C)
a) Brief knowledge of	1)Epidemiology/ Prevention /	1)Diagnostic audiometry
acoustics	rehabilitation of balance &	
	hearing disorders	
b) Use of computers in	2) Hearing aids	2) Diagnostic testing of
audiological and vestibular		vestibular system
testing and rehabilitation		
	3) Cochlear implants	

3. Otology

Diseases of external auditory canal and middle ear – acute suppurative otitis media(ASOM), CSOM, complications of CSOM – plastic surgery of ear – otosclerosis – S N hearing loss in adults and children – vertigo – Meniere's disease – ototoxicity – vestibular schwannoma – tumours of middle ear cleft – glomus jugulare – disorders of facial nerve – cochlear implants.

Middle ear implants/BAHA/Bone anchored hearing aid. Rehabilitation of hearing handicap including dispensing. hearing aid/speech therapy. Early detection of hearing and its management/OAE (Oto acoustic emission)

4. Laryngology

Acute & chronic infections of oral cavity, pharynx, tonsils and larynx.

- Trauma & stenosis of larynx
- Management of obstructed airway and tracheostomy
- Disorders of voice
- Neurological affections of pharynx and larynx
- Laryngeal framework surgery, Vocal rehabilitation/ stroboscopy.
- Pharyngeal pouch
- Tumours of larynx
- Angiofibroma and nasopharyngeal lesions

Tumours of oropharynx and lymphoma of head and neck

Tumours of hypopharynx

Benign diseases of the neck

The thyroid gland and its disorders

Diseases of salivary glands – neoplastic & non neoplastic

Tumours of infra temporal fossa and parapharyngeal space. The cysts, granulomas and tumours of jaw, nose and sinuses.

The oesophagus in otolaryngology, facial plastic surgery and reconstructive surgery of head and neck.

Terminal care of head and neck cancer.

Neck masses. Neck space infections.

Chemo/Radio/Photodynamic therapy.

- 5. Rhinology
 - Radiology of nose and para nasal sinuses
 - Congenital anomalies of the nose
 - Conditions of external nose
 - Abnormalities of smell
 - Allergic rhinitis
 - Nasal polypi
 - Infective rhinosinusitis / complications and surgical management
 - Disorders and trauma of facial skeleton
 - Disorders of nasal septum
 - CSF rhinorrhoea
 - Epistaxis
 - Snoring and sleep apnea
 - Chronic granulomas of nose and PNS

- The orbit in relation to ENT
- Trans sphenoidal hypophysectomy
- Skull base surgery
- Extended endoscopic sinus surgery
- Overview of facial pain and headache
- Facial & plastic reconstructive surgeries including facio- maxillary, cleft lip & palate and facial re animation.

Thrust areas:

- 1. Skull base surgeries
- 2. Snoring and sleep apnea
- 3. Laryngeal framework surgery
- 4. Rehabilitation of hearing impaired person
- 5. Ear trauma
- 6. Ototoxicity
- 7. Facial plastic reconstruction
- 8. Rehabilitation following treatment for Head & Neck cancer.
- ii) Clinical/Practical

Mandatory: Dissection of head and neck

10 temporal bone dissections which include:

- 1. Cortical mastoidectomy
- 2. MRM & radical mastoidectomy
- 3. Facial nerve decompression
- 4. Posterior tympanotomy
- 5. Labyrinthectomy

- 6. Endolymphatic sac decompression
- 7. Translabyrinthine approach to IAM
- iii) Essential list of surgical procedures

Following procedures are classified as :

- a) To be perfomed independently (PI)
- b) To assist a senior specialist / consultant (PA)
- c) To observe the procedure (O)

Otology

To be done independently (PI).

Cortical mastoidectomy - 2 cases

MRM / radical mastoidectomy - 1 case

Myringoplasty – 2 cases

Myringotomy and grommet insertion – 2 cases

To assist/observe a senior specialist / consultant (PA)

Ossiculoplasty

Facial nerve decompression

Stapedectomy (PA/O)

1. Rhinology

To be done independently (PI)

- Reduction of fracture nasal bones 2 cases
- SMR 5 cases
- Septoplasty 2 cases
- Diagnostic nasal endoscopy 5 cases
- FESS a) Uncinectomy -1 case

- b) Polypectomy 2 cases
- c) Anterior ethmoidal cell clearance -1 case
- d) Middle meatal antrostomy –1 case
- Caldwell Luc 1 case
- Antral lavage 5 cases
- Intranasal antrostomy -1 case

To assist or observe:

- FESS Posterior ethmoid / sphenoid ./ frontal sinus surgery
- Maxillo facial surgeries
- External operations of frontoethmoid sinus
- Maxillectomy Total

- Partial

2. Laryngology, Head and Neck

To be done independently (PI)

- Tracheostomy 2 cases
- Tonsillectomy 5 cases
- Adenoidectomy 2 cases
- DL Scopy 7 cases
- Oesophagoscopy / Upper oesophagus foreign body removal 4 cases

To assist or observe

- Bronchoscopy
- Total / Partial laryngectomy
- Block dissections of the neck

- d) To wash and observe a senior (O)
 - Thyroid surgery
 - Salivary gland surgery
 - Microlaryngeal surgery

IV. TEACHING AND LEARNING ACTIVITIES:

A) Theoretical Teaching:

- **1. Lectures:** Lectures are to be kept to a minimum. Certain selected topics can be taken as lectures. Lectures may be didactic or integrated.
- 2. Journal Club: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book the relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A time table with names of the students and the moderator should be announced in advance.
- 3. Subject Seminar: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the subject with names of the students and the moderator should be announced in advance.
- 4. **Case Discussion:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the case presentation with names of the students should be announced in advance.
- 5. Ward Rounds: Ward rounds may be service or teaching rounds.
 - [a] Service Rounds: Postgraduate students should do service rounds every day for the care of the patients. Newly admitted patients should be worked up by the post graduate student and presented to the faculty members the following day.
 - [b] Teaching Rounds: Every unit should have 'grand rounds' for teaching purpose at the bed side. A diary should be maintained for day-to-day activities by the postgraduate students.

Entries of (a) and (b) should be made in the Log book.

- 6. Clinico-Pathological Conference: Recommended once a month for all post graduate students. Presentation to be done by rotation. Presentations will be assessed using checklist. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPCs.
- 7. Inter departmental Meetings: Strongly recommended particularly with departments of Oncology or Radio-diagnosis at least once a month. These meetings should be attended by postgraduate students and relevant entries must be made in the Log Book.

Oncology: Interesting cases shall be chosen and presented by the post-graduate students and discussed by them as well as the senior staff of Oncology department. The staff of Oncology department would then show the slides and present final diagnosis. In these sessions the advanced immuno-histo-chemical techniques, the burgeoning markers, other recent developments can be discussed.

Radio-diagnosis: Interesting cases and the imaging modalities should be discussed. Emphasis should be given for the radiological differential diagnosis.

- 8. Mortality Meeting: The mortality meeting should be conducted in the department every month. The post graduate student should prepare the details regarding the cause of death after going through the case records in detail, and should present during the mortality meeting. The death records will be discussed in detail during this meeting.
- **9. Teaching Skills:** Postgraduate students must teach under graduate students (eg. medical, nursing) by taking demonstrations, bedside clinics, tutorials, lectures etc. Assessment is made using a checklist by medical faculty as well as by the students. Record of their participation is to be kept in Log Book. Training of postgraduate students in Educational Science and Technology is recommended.
- **10.** Continuing Medical Education Programmes (CME): Recommended that at least 1 state level CME programme should be attended by each student during the course.
- 11. **Conferences:** Attending conference is compulsory. Postgraduate student should attend one national and one state level conference during the course.
- 12. **Research Activities:** The Postgraduate students to be encouraged to carry out research activities in the department, institution and or community.
B) Clinical / Practical Training:

1. Rotational Postings in other Departments:

Neurosurgery	4 weeks
Plastic Surgery	2 weeks
Head & Neck Oncology	4 weeks
Otology Observership	2 weeks
Speech & Hearing	2 weeks
Anesthesiology	2 weeks

V. Other Criteria to Fulfill for the Diploma Course:

1. Internal evaluation:

During the course of two years, the department will conduct two tests. One at the end of first year and other at the end of second year. The second test will be a preliminary examination which may be held three months before the final examination. The test may include the written papers, practicals / clinicals and viva-voce. Records and marks obtained in such tests will be maintained by the head of the department and will be sent to the University when called for.

Results of all evaluations should be entered into P.G's logbook / diary and departmental file for documentation purposes. Main purpose of periodic examination and accountability is to ensure clinical expertise of students with practical and communication skills and balance broader concept of diagnostic and therapeutic challenges.

Maintenance of Log Book:

Every candidate shall maintain a Log book/work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any, conducted by the candidate. All the procedures performed by the post graduate students should be entered in the Log book. All the daily activities including the ward rounds and the routine procedures preformed on day to day basis should be entered in the Log book and it should be verified and signed by the faculty member. The Log book shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented during the University practical/clinical examination.

VI. SCHEME OF EXAMINATION:

Candidates will be allowed to appear for examination only if attendance (Minimum 80%) and internal assessment are satisfactory.

i) Theory: 300 Marks

There shall be three papers, each of three hours duration. Total marks of each paper will be 100. Questions on recent advances may be asked in any or all the papers. The format of each paper will be same as shown below.

Type of Questions	No. of	Marks for each question	Total Marks
	Questions		
Long essay	02	20	40
Short essay	06	10	60
Grand Total			100

Paper I: Otology including basic sciences and recent advances -100 marks

Paper II: Rhinology including basic sciences and recent advances -100 marks

Paper III: Pharyngolaryngology & broncho oesophagology including basic sciences and recent advances - 100 marks

Note : The distribution of chapters/topics shown against the papers are suggestive only and may overlap or change.

B. Clinical Examination: 300 Marks

Long case 1 100 marks

Short cases 2 (50x 2) 100 marks

C. Viva- Voce Examination: 100 Marks

Aims: To elicit candidate's knowledge and investigative/ therapeutic skills.

1). Viva-voce examination – [100 Marks]

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components

of course contents. In addition candidates may be given case reports, gross specimens, histo-pathology slides, X-rays, ultrasound, CT and MRI scan images, temporal bone dissection.etc., for interpretation and questions on these as well as use of instruments will be asked. Questions on operative surgery will be asked. Student's knowledge on use of instruments and drugs will also be evaluated during viva-voce examination.

D. Maximum Marks:

Maximum marks for Diploma in	Theory	Practical	Viva	Grand Total
Otorhinolaryngology	300	200	100	600
and Head & Neck				
Surgery (D L O)				

VII. RECOMMENDED BOOKS (Latest editions) :

Sr.	Name of the Textbook	Authors	Publisher
1.	Scott Brown's Otorhinolaryngology & Head and Neck Surgery (3vols) VII edition,	Michael Gleeson & others	Hodder Arnold
2.	Commings Otolaryngology , Head and Neck Surgery 5 volumes	Charles W Cummings, Paul WF lint, Lee A Harker, Bruee Haugh ley, Mark A Richardson, K. Thomas Robbins, David E Schuller, J Regan Thomas	Elsevier, Mosby
3.	Rob and Smith Operative Surgery Ear, Nose and Throat, Head &Neck	Hugh , David cartere, RCG Rassel	Butterworth's
4.	Paperella Otolaryngology 4 Vol set	Paparella, Shumrick, Glackman, Heyerhoff	Saunders
5.	Logan Turner's Diseases of the Nose, Throat and Ear	A.G.D. Maran	Butterworth Heinemann Ltd.
6.	An Atlas of Head and Neck Surgery	Lore	Saunders
7.	Glasscock – Shambaugh Surgery of the Ear	Michoel Glasscock III , Aina Julianna Gulya	BC Deker Inc. Elsevier

8.	Ballenger Snow Jr.	Lippincott Williams & Wilkins
	Otorhinolaryngology,	
	Head and Neck Surgery	
9.	Controversies of	
	ENT/Otolaryangology	

VIII. RECOMMENDED JOURNALS:

Sr.	Name of the Journal
1	The Laryngoscope – Lippincott Williams & Wilkins
2	Indian Journal of Otolaryngology and Head & Neck Surgery –
	Springer
3	Annals of Otology Rhinology Laryngology – Annals publishing
	Co.
4	Archives of Otorhinolaryngology – American Medical
	Association
5	Journal of Laryngology & Otology - UK
6	Indian Journal of Otology
7	Recent advances in Otorhinolaryngology – Mosby
8	The Otolaryngology clinics of North America – W B Saunders
	Company
9	Clinical Otolaryngology & Allied Sciences.

POST GRADUATE DIPLOMA COURSE IN DERMATOLOGY, VENEREOLOGY AND LEPROSY (DDVL)

The course of the postgraduate students in Dermatology, Venereology and Leprosy is to impart knowledge and skills that may enable them to diagnose and treat common and rare diseases, complications of skin diseases and their unusual manifestations. The student should also be aware of the recent advances in the speciality.

I. GOALS:

They should also be able to:

- Practice efficiently and effectively, backed by scientific knowledge and skill base.
- Exercise empathy and a caring attitude, maintaining high ethical standards.
- Continue to evince keen interest in continuing medical education in the speciality, irrespective of whether he/she is in a teaching institution or a practicing specialist.
- Be a motivated 'teacher' defined as a specialist keen to share his/her knowledge and skills with a colleague or a junior or any learner.

II. OBJECTIVES:

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The objectives may be considered under the subheadings.

- 1. Knowledge
- 2. Skills
- 3. Human values, ethical practice and communication abilities.

1. Knowledge:

At the end of the course of Dermatology, Venereology and Leprosy the student should be able to:

• Demonstrate sound knowledge of common diseases, their clinical manifestations, including emergency situations and investigative procedures to confirm the diagnosis.

- Demonstrate comprehensive knowledge of various modes of topical therapy.
- Describe the mode of action of commonly used drugs, their doses, sideeffects/toxicity, indications and contra-indications and drug interactions.
- Describe commonly used modes of management including the medical and surgical procedures available for the treatment of various diseases and to offer a comprehensive plan of management for a given disorder.
- Diagnose and manage emergencies, specially recognizing the need for referral wherever appropriate and necessary.
- Demonstrate understanding of basic sciences relevant to the speciality.
- Identify social, economic, environmental and emotional determinants in a given case, and take them into account for planning therapeutic measures.
- Recognize conditions that may be outside the area of his/her speciality/ competence and to refer them to the proper specialist.
- Update oneself by self-study and by attending courses, conferences and seminars relevant to the speciality.
- Teach and guide his/her team, colleagues and other students.
- Undertake audit, use information technology tools and carry out research, both basic and clinical, with the aim of publishing his/her work and presenting his/her work at various scientific forums.

2. Skills:

- Should be able to do:
 - Slit skin smears
 - KOH examination for fungal filaments
 - Wood's lamp examination
 - Tzanck smear
 - Skin biopsy for diagnostic purposes
 - Dermabrasion
 - Cautery chemical, electrical, radiofrequency

- Punch grafting for vitiligo
- Phototherapy (UVB, UVA, PUVA)
- Iontophoresis
- Comedone extraction
- Chemical peeling
- Molluscum and Milia extraction
- Suture techniques
- Lasers, Cryotherapy, Nail Surgery, Acne Surgery
- Take a proper clinical history, examine the patient, perform essential diagnostic procedures and order relevant tests and interpret them to arrive at a reasonable diagnosis.
- Perform common procedures relevant to the speciality.
- Provide basic and advanced life support services in emergency situations.
- Should be able to monitor the patient effectively.

3. Human values, Ethical practice and Communication abilities

- Adopt ethical principles in all aspects of his/her practice. Professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.
- Provide leadership and get the best out of his team in a congenial working atmosphere.
- Apply high moral and ethical standard while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- Respect the patient's rights and privileges, including the right to information and the right to seek a second opinion.

III. COURSE CONTENTS:

No limit can be fixed and no fixed number of topics can be prescribed as course contents. He/she is expected to know his subject in depth, but emphasis should be laid on the diseases/health problems most prevalent in that area. Knowledge of recent advances and basic sciences as applicable to his/her speciality should get high priority. Competence in surgical skills commensurate with the speciality (actual hands on training) must be ensured.

i) Theory

DERMATOLOGY

- 1. Basics of cutaneous bacteriology, mycology, virology, parasitology and host resistance
- 2. Common laboratory procedures, stains and culture media etc. related to the cutaneous diagnosis
- 3. Basic pathologic patterns and reactions of skin
- 4. Common laboratory stains and procedures used in the histopathological diagnosis of skin diseases and special techniques such as immunofluorescence, immunoperoxidase techniques and other related techniques
- 5. Introduction and Historical Bibliography
- 6. Comparative Dermatology
- 7. Anatomy and Organization of Human Skin
- 8. Functions of the Skin
- 9. Diagnosis of Skin Disease
- 10. Epidemiology of Skin Disease
- 11. Histopathology of the Skin: General Principles
- 12. Molecular Biology
- 13. Inflammation
- 14. Clinical Immunology, Allergy and Photoimmunology
- 15. Wound Healing

- 16. Genetics and Genodermatoses
- 17. Prenatal Diagnosis of Genetic Skin Disease
- 18. The Neonate
- 19. Naevi and other Developmental Defects
- 20. Pruritus
- 21. Eczema, Lichenification, Prurigo and Erythroderma
- 22. Atopic Dermatitis
- 23. Contact Dermatitis: Irritant
- 24. Contact Dermatitis: Allergic
- 25. Occupational Dermatoses
- 26. Mechanical and Thermal Injury
- 27. Reactions to Cold
- 28. Cutaneous Photobiology
- 29. Viral Infections
- 30. Bacterial Infections
- 31. Mycobacterial Infections
- 32. The Treponematoses
- 33. Mycology
- 34. Parasitic Worms and Protozoa
- 35. Diseases Caused by Arthropods
- 36. Disorders of Keratinization
- 37. Psoriasis
- 38. Non-Melanoma Skin Cancer and Other Epidermal Skin Tumours
- 39. Tumours of the Skin Appendages
- 40. Disorders of the Cutaneous Melanocyte

- 41. Disorders of Skin Colour
- 42. Genetic Blistering Diseases
- 43. Immunobullous Diseases
- 44. Lichen Planus and Lichenoid Disorders
- 45. Disorders of the Sebaceous Glands
- 46. Rosacea, Perioral Dermatitis and Similar Dermatoses, Flushing and Flushing Syndromes
- 47. Disorders of Sweat Glands
- 48. Disorders of Connective Tissue
- 49. Urticaria and Mastocytosis
- 50. Purpura and Microvascular Occlusion
- 51. Vasculitis and Neutrophilic Vascular Reactions
- 52. Diseases of the Veins and Arteries: Leg ulcers
- 53. Disorders of Lymphatic Vessels
- 54. Histiocytoses
- 55. Soft-Tissue Tumours and Tumour-like Conditions
- 56. Cutaneous Lymphomas and Lymphocytic Infiltrates
- 57. Disorders of Subcutaneous Fat
- 58. The Connective Tissue Diseases
- 59. Metabolic and Nutritional Disorders
- 60. Sarcoidosis and other Granulomas
- 61. Systemic Disease and the Skin
- 62. The Skin and the Nervous System
- 63. Psychocutaneous Disorders
- 64. Disorders of Nails
- 65. Disorders of Hair

- 66. The Skin and the Eyes
- 67. The External Ear
- 68. The Oral Cavity and Lips
- 69. The Breast
- 70. The Genital, Perianal and Umbilical Regions
- 71. Racial Influences on Skin Disease
- 72. The Ages of Man and their Dermatoses
- 73. General Aspects of Treatment
- 74. Systemic Therapy
- 75. Drug Reactions
- 76. Erythema Multiforme, Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis
- 77. Topical Therapy
- 78. Radiotherapy and Reactions to Ionizing Radiation
- 79. Physical and Laser Therapies
- 80. Dermatological Surgery and Cosmetic Procedures
- 81. Formulary of Topical Applications
- 82. Pregnancy and Skin

LEPROSY

- 1. Epidemiology
- 2. Genetic aspects of leprosy
- 3. Aetiology Structure and microbiology of Mycobacterium leprae
- 4. Pathogenesis and Immunology of leprosy
- 5. Classifications of leprosy
- 6. Clinical Manifestations of leprosy
- 7. Examination of a leprosy patient

- 8. Histopathology of leprosy
- 9. Lepra reactions
- a. Immunology
- b. Clinical presentations
- c. Histopathology
- 10. Deformities in leprosy, their prevention and treatment
- 11. Systemic involvement in leprosy
- 12. Diagnosis of leprosy
- 13. Differential diagnosis of leprosy
- 14. Experimental transmission of M.leprae
- 15. Prognosis of leprosy
- 16. Management of leprosy and lepra reactions
- 17. Immunotherapy in leprosy
- 18. Newer drugs in leprosy
- 19. Leprosy control programmes
- 20. Socio-economic aspects of leprosy

VENEREOLOGY

A) SEXUALLY TRANSMITTED INFECTIONS

- 1. Epidemiology and Introduction of Sexually Transmitted Infections
- 2. Applied Anatomy of Male and Female Reproductive Tract
- 3. Examination of the Patient in an STI Clinic
- 4. Side Laboratory Procedures in Sexually Transmitted Infections
- 5. Syphilis
 - Early Acquired Syphilis
 - Late Acquired Syphilis

- Cardiovascular Syphilis
- Neurosyphilis
- Congenital Syphilis
- Serological Tests and their Interpretation
- Treatment of Syphilis
- Prognosis of Syphilis
- 6. Gonorrhoea
 - Mode of Infection, Diagnostic Methods, Pathology, Incubation Period
 - Gonorrhoea in the Male
 - Gonorrhoea in the Female
 - Metastatic Gonorrhoea, Oropharyngeal Gonorrhoea, Proctitis, Conjunctivitis
 - Gonorrhoea in Children
 - Treatment and Prognosis of Gonorrhoea
- 7. Chancroid
- 8. Lymphogranuloma Venereum
- 9. Granuloma Inguinale
- 10. 'Non-specific' Urogenital Infections
- 11. Non-gonococcal Genital Infections in Children
- 12. Non-gonococcal Ophthalmia
- 13. Trichomonal Infestation of the Genital Tract
- 14. Candidosis of the Genital Tract
- 15. Herpes Genitalis & Hepatitis B infection
- 16. Pelvic Inflammatory Disease
- 17. Bacterial Vaginosis
- 18. Epididymitis and Prostatitis

- 19. Sexually Transmitted Diseases Associated Arthritis
- 20. Sexually Transmitted Diseases in Children
- 21. Sexually Transmitted Diseases in Women and Pregnancy
- 22. Sexual Assault and Sexually Transmitted Diseases
- 23. Non-Venereal Diseases of Genitalia
- 24. Premalignant and Malignant Lesions of Genitalia
- 25. Clinical Approach to Genital Ulcer Disease
- 26. Clinical Approach to Vaginal and Urethral Discharge
- 27. Critical Evaluation of Syndromic Management of Sexually Transmitted Diseases
- 28. Psychological aspects of venereal diseases
- 29. Venereal diseases and the public health

B) HIV / AIDS

- 1. Introduction
- 2. Epidemiology
- 3. Structure of the Virus
- 4. Pathogenesis
- 5. Clinical Features
 - i. Cutaneous Manifestations of HIV
 - ii. Systemic Manifestations of HIV
- 6. HIV & Sexually Transmitted Diseases
- 7. Stages of HIV (Progression from HIV to Full Blown AIDS)
- 8. Opportunistic Infections in AIDS
- 9. Laboratory Diagnosis
- 10. Markers of Disease Progression (CD4 + / CD8 + Counts)
- 11. Other Lab Tests

12. Treatment - Anti-Retroviral Therapy

- a. Introduction
- b. Classification
- c. Mechanism of action
- d. Indications of HAART
- e. Monitoring of patients
- f. Side Effects
- 13. National AIDS Control Programme

ii) Clinical/Practical

Postgraduate students should do ward rounds everyday. Newly admitted patients should be worked up by them and presented to the teaching-staff the following day. They are also expected to work up patients in the out-patient department, take a proper clinical history, examine the patient, perform essential diagnostic/therapeutic procedures and order relevant tests and interpret them to arrive at a reasonable diagnosis.

iii) Operative skills:

- A) Essential list of surgical/therapeutic procedures:
 - Dermabrasion
 - Local Anaesthesia & Nerve blocks
 - Cautery chemical, electrical, radiofrequency
 - Punch grafting for Vitiligo
 - Suction blister grafting
 - Split skin thickness grafting
 - Nonculture melanocyte transfer technique
 - Phototherapy
 - Iontophoresis
 - Comedone extraction

- Chemical peeling
- Molluscum and Milia extraction
- Procedures with Fractional Co₂ Laser
- PUVA therapy, etc.
- Botulinum toxin injection & fillers
- Nail & Acne surgery
- Long pulsed Nd Yag Laser; Q switched Nd Yag Laser
- Cryotherpy
- B) Diagnostic procedures:
 - Skin biopsy for diagnostic purposes
 - Slit skin smears
 - KOH examination for fungal filaments
 - Wood's lamp examination
 - Tzanck smear,
 - Patch test
 - Autologous serum skin test for Chronic
 - Idiopathic urticaria
 - Dermatoscopy (Dermoscopy)
 - Trichoscopy
 - Trichogram etc.

IV. TEACHING AND LEARNING ACTIVITIES:

A) Theoretical Teaching:

- **1. Lectures:** Lectures are to be kept to a minimum. Certain selected topics can be taken as lectures. Lectures may be didactic or integrated.
- 2. Journal Club: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book the relevant details. The presentations would be evaluated using check

lists and would carry weightage for internal assessment. A time table with names of the students and the moderator should be announced in advance.

- 3. Subject Seminar: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the subject with names of the students and the moderator should be announced in advance.
- 4. **Case Discussion:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the case presentation with names of the students should be announced in advance.
- 5. Ward Rounds: Ward rounds may be service or teaching rounds. Service Rounds: Postgraduate students should do service rounds every day for the care of the patients. Newly admitted patients should be worked up by the post graduate student and presented to the faculty members the following day.

Teaching Rounds: Every unit should have 'grand rounds' for teaching purpose at the bed side. A diary should be maintained for day-to-day activities by the post-graduate students.

Entries of (a) and (b) should be made in the Log book.

- 6. Clinico-Pathological Conference: Recommended once a month for all post graduate students. Presentation is to be done by rotation. Presentations will be assessed using checklist. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPCs.
- 7. Inter Departmental Meetings: Strongly recommended particularly with departments of Pathology, Microbiology and Immunology at least once a month. These meetings should be attended by post-graduate students and relevant entries must be made in the Log Book.

Pathology: Interesting cases shall be chosen and presented by the postgraduate students and discussed by them as well as the senior staff of Pathology department. The staff of Pathology department would then show the slides and present the final diagnosis. In these sessions the advanced immunohistochemical techniques, the burgeoning markers, other recent developments can be discussed.

Microbiology: Interesting cases shall be chosen and presented by the postgraduate students and discussed by them as well as the senior staff of Microbiology department. The staff of Microbiology department would then show the slides and present final diagnosis. In these sessions the advanced immunohistochemical techniques, the burgeoning markers, other recent developments can be discussed.

Immunology: Interesting cases shall be chosen and presented by the postgraduate students and discussed by them as well as the senior staff of Immunology department. The staff of Immunology department would then discuss the cases with investigations and present final diagnosis. In these sessions the advanced immunohistochemical techniques, the burgeoning markers, other recent developments can be discussed.

- 8. **Mortality Meeting:** The mortality meeting should be conducted in the Department every month. The post graduate student should prepare the details regarding the cause of death after going through the case records in detail, and should present during the mortality meeting. The death records will be discussed in detail during this meeting.
- 9. **Teaching Skills:** Post-graduate students must teach under graduate students (eg. Medical, Nursing) by taking demonstrations, bedside clinics, tutorials, lectures, etc. Assessment is made using a checklist by medical faculty as well as by the students. Record of their participation is to be kept in the Log Book. Training of postgraduate students in Educational Science and Technology is recommended.
- 10. **Continuing Medical Education Programmes (CME):** Recommended that at least 1 state level CME programme should be attended by each student during the course.
- 11. **Conferences:** Attending conference is compulsory. Post-graduate student should attend one national and one state level conference during the course.
- 12. **Research Activities:** The Post-graduate students should be encouraged to carry out research activities in the department, institution and or community.

B) Clinical / Practical Training:

1. Rotational Postings in other Departments:

These are essential to acquire knowledge in allied subjects as applicable to Dermatology, Venereology and Leprosy. It is preferable to post students to General Medicine, Paediatrics, and Plastic Surgery – 2 weeks each and to Leprosy hospital or National Leprosy control unit for 2 weeks.

Students may attend Basic Sciences departments like Anatomy, Physiology and Biochemistry.

V. OTHER CRITERIA TO FULFILL FOR THE DIPLOMA COURSE:

1. Internal evaluation:

During the course of two years, the department will conduct two tests. Both of them will be annual, one at the end of first year and other at the end of second year. The second test will a preliminary examination which may be held three months before the final examination. The test may include the written papers, practicals / clinicals and viva-voce. Records and marks obtained in such tests will be maintained by the head of the department and will be sent to the University when called for.

Results of all evaluations should be entered into P.G's logbook / diary and departmental file for documentation purposes. Main purpose of periodic examination and accountability is to ensure clinical expertise of students with practical and communication skills and balance broader concept of diagnostic and therapeutic challenges.

2. Maintenance of Log Book:

Every candidate shall maintain a Log book/work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any, conducted by the candidate. All the procedures performed by the post graduate students should be entered in the Log book. All the daily activities including the ward rounds and the routine procedures performed on a day to day basis should be entered in the Log book and it should be verified and signed by the faculty member. The Log book shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the University practical/ clinical examination.

VI. SCHEME OF EXAMINATION:

Candidates will be allowed to appear for examination only if attendance (Minimum 80%) and internal assessment are satisfactory.

i) Theory: 300 Marks

There shall be three papers, each of three hours duration. Total marks of each paper will be 100. Questions on recent advances may be asked in any or all the papers. The format of each paper will be same as shown below.

Type of C	Questions	No. of	Marks for each question	Total Marks
		Questions		
Long essa	ıy	02	20	40
Short ess	ay	06	10	60
Grand Total				100
Paper I Includes basic sciences in relation to Dermatology, Venereology and Leprosy				100
Paper II Dermatology including systemic diseases & dermatotherapeutics				100

Paper IIIVenereology and Leprosy100

Note : The distribution of chapters/topics shown against the papers are suggestive only and may overlap or change.

B. Clinical Examination: 200 Marks

Total	200
10 Spotters (Varieties of cases included)	100
And Leprosy)	25
2 Short cases (1 each of STD/HIV	25
1 Long case (Dermatology)	50

C. Viva- Voce Examination: 100 Marks

Aims: To elicit candidate's knowledge and investigative/ therapeutic skills.

1) Viva-voce examination – [100 Marks]

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It

includes all components of the course content. In addition candidates may be given case reports, gross specimens, histo-pathology slides, microbiology staining techniques etc., for interpretation and questions on these as well as use of instruments will be asked. The student's knowledge on use of instruments and drugs will also be evaluated during viva-voce examination.

D. Maximum Marks:

Maximum marks for Diploma in Dermatology,	Theory	Practical	Viva	Grand Total
Venereology and Leprosy (DDVL)	300	200	100	600

VII. RECOMMENDED BOOKS (Latest editions):

SL. Name of the book Name of the author Publisher NO. Rook's Textbook of Blackwell Science 1 Burns, Breathnach, Cox, Dermatology - 4 vol. Griffiths Fitzpatrick's Dermatology McGraw Hill Publications Goldsmith, Katz, Gilchrest, 2 in General Medicine – 2 Paller, Leffell, Wolff vol. 3 Dermatology – 2 vol. Moschella, Hurley W.B.Saunders Company 4 Lever's Histopathology of Elder, Elenistsas, Johnson Lippinocott-Raven the Skin 5 IADVL Text Book and Atlas Valia, Valia, Siddappa Bhalani Publishing House of Dermatology – 2 vol. Andrew's Diseases of the W.B.Saunders, Elsevier 6 Elston, James, Berger, Skin-Clinical Dermatology 7 Text Book & Atlas of Satish S. Savant, Radha Association of Scientific Dermato-Surgery & Atal-Shah, Deepak Gore Cosmetologists and Cosmetology Dermatosurgeons Skin Disease: Diagnosis Thomas P. Habif 8 Mosby Publication and Treatment Mosby Publication **Clinical Dermatology** Habif 9 10 Comprehensive Wolvorten Elsevier **Dermatological Drug** Therapy

a) Text Books in Dermatology (Latest Edition):

h)	Text Books	in I	enrosv	(Latest	Edition):
D)	I CAL DOORS		.epi03y	Laicsi	Luition

SL.	Name of the book	Name of the author	Publisher
NO.			
1	Leprosy	Hastings	Churchill Livingstone
2	Leprosy	Dharmendra	Samant & Company
3	Leprosy	Bryceson, Roy & Pfaltzgraff	Churchill Livingstone
4	Handbook of Leprosy	Jopling, Mc Dougall	CBS Publishers &
			distributors

c) Text Books in Venereology (Latest Edition)

SL.	Name of the book	Name of the author	Publisher
NO.			
1	Sexually Transmitted	Holmes, Sparling, etc	McGraw Hill Publications
	Diseases		
2	Venereal Diseases	King, Nicol	ELBS
3	Sexually Transmitted	Bhushan Kumar, Gupta	Elsevier
	Infections	V.K. Sharma	

VIII. RECOMMENDED JOURNALS:

a) Journals in Dermatology:

SL.	Name of the journal
NO.	
1	Archives of Dermatology
2	British Journal of Dermatology
3	Dermatologica
4	Indian Journal of Dermatology, Venereology & Leprosy
5	International Journal of Dermatology
6	Journal of American Academy of Dermatology
7	Journal of Investigative Dermatology
8	Dermatology Clinics of North America

b) Journals in Venereology

SL. NO.	Name of the journal
1	Genitourinary Medicine
2	Sexually Transmitted Infections (British)

c) Journals in Leprosy

SL. NO.	Name of the journal
1	Indian Journal of Leprosy
2	International Journal of Leprosy
3	Leprosy Review

Post Graduate Courses in Anesthesia Diploma in Anesthesia (DA)

Goals:

The Diploma course in anesthesiology is a two year integrated course after satisfactory completion of the course where candidates shall be able to practice anesthesiology completely, confidently and safely in the community that he/she serves.

The goal of postgraduate training course would be to train a M.B.B.S. doctor who will:

- 1. Practice independently the art and science of anesthesiology, backed by scientific knowledge and skill based approach.
- 2. Undertake responsibilities in critical care, trauma, respiratory therapy and resuscitation of unconscious patients.
- 3. Become skilled in acute and chronic pain management.
- 4. Be motivated 'teacher'- defined as anesthesiologist keen to share his/her knowledge and skills with a colleague or a junior or any learner.

Specific Learning Objectives:

The following objectives are laid out to achieve the goals of the course. These objectives have to be achieved by the candidates by the end of his/her course. The objectives may be considered under the following headings.

Knowledge (Cognitive domain)

Skills (Psychomotor domain)

Attitudes, Communication skills, Human values and Ethical practice.

At the end of the training candidate must be able to:

Knowledge:

- Demonstrate understanding of basic sciences relevant to Anaesthesia.
- Describe the anaesthetic management of common and uncommon surgical ailments belonging to various branches of surgery, at all ages requiring operative interventions with a basic knowledge of the aetiology, pathophysiology and the surgical treatment of the conditions

- Describe the underlying theoretical background of mechanism pain perception and pain management.
- Describe the theory of the underlying aetiology, mechanism and management of the conditions requiring resuscitation.
- Demonstrate understanding of the theoretical basis of poly trauma and the science of resuscitation.
- Recognize the conditions that may be outside the area of his competence and refer them to an appropriate specialist prior to anesthetizing them.
- Update himself / herself by self-study and by attending Continuing Medical Education courses, conferences and seminars relevant to anaesthesia.
- Demonstrate understanding of medico-legal aspects of anaesthesia.

Practical/ Clinical Skills:

- Perform 'Pre-Anaesthetic Evaluation' of patients undergoing surgery by taking, proper clinical history, examining the patient, ordering relevant investigations and interpreting them to have additional information about the surgical condition, and or the associated medical condition, which warrant the modification of the proposed anaesthetic management.
- Administer anaesthesia (general and or regional) to common surgical operations independently and to super specializations like cardiac surgery, neurosurgery etc. with the help of a senior anaesthesiologist.
- Provide Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS).
- Manage airway and perform ventilatory care etc., of unconscious and poly trauma cases as a member of trauma team and critical care unit team.
- Undertake complete patient clinical monitoring using monitors during preoperative, intra-operative and postoperative ventilatory care of the patients.
- Perform acute and chronic pain management.

Attitudes and Communication Abilities:

- Adopt ethical principles in all aspects of his anaesthetic practice. Professional honesty and integrity are to be fostered. Anaesthesia care is to be delivered to all in need, irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain the various options

available in the anaesthetic management, critical care, pain management and to obtain written informed consent from the patient.

- Be humble and accept the limitations of his/her knowledge and skill and to ask for help from colleagues when needed.
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

Course Contents:

It includes topics not only of Anaesthesiology but also those aspects of all the other branches of medicine relevant to Anaesthesia viz., Medicine and its allied subjects, Surgery and its allied branches, Pediatrics, Applied Anatomy, Physiology, Pathology, Pharmacology, Microbiology etc. It is intended as a guide to the candidates and it is not comprehensive. As and when there is newer development, it becomes eligible for inclusion. Hence, the candidates should be familiar themselves with the current content of the scientific journals and reviews of major topics in Anaesthesia.

History of Anaesthesiology.

Basic Sciences related to Anaesthesia including Anatomy, Physiology, Pharmacology, Biochemistry, Pathophysiology, Immunology and Genetics.

Medicine applied to Anaesthesiology.

Physics related to Anaesthesiology, Electronics, Computers and Lasers, in Anaesthesiology. Internet / Medline and its uses and applications.

Anaesthesiology.

- i. Pre anaesthetic evaluation and preparation.
- ii. Principles and Practice of Anaesthesiology including pre, per and post operative care, of patients belonging to General Surgery, Obstetrics and Gynaecology, ENT, EYE, Orthopaedics, and other superspecialities like Cardiothoracic surgery, Neurosurgery, Plastic Surgery and Surgical Endocrinology, Surgical Oncology, Paediatrics, Urology, Dental Surgery, Laproscopy Surgery etc.
- iii. Blood transfusion-Fluid and Electrolyte balance, Acid Base Balance.
- iv. Fires and Explosion in operation theatre.
- v. Operation theatre sterilization procedures.

- vi. Different methods of anaesthetic techniques.
- vii. Regional anaesthesia including spinal, epidural and caudal etc.
- viii. Local Anaesthesia including peripheral nerve blocks and sympathetic nerve block, etc.
- ix. Complication in anesthesiology and their management both per and post operatively.

Pain Clinic organization and management. Pain path way, and management of acute and chronic pain.

Respiratory Therapy and management of both acute and chronic respiratory insufficiencies and ventilator commitments in intensive care unit, surgical intensive care unit, medical intensive care unit, neuro surgical intensive care unit and trauma care.

Critical Care Anaesthesiology and Trauma Care Unit management.

- Anaesthesia in abnormal environments like high altitude anaesthesia etc.
- Anaesthesia for day care surgery.
- Anaesthesia for diagnostic procedure like endoscopy, Computed Tomographic Scan (C.T. Scan) Magnetic Resonance Imaging (M.R.I.) etc.
- 9. Informed consent/medico legal issues: understanding the implications of acts of omission and commission in practice. Issues regarding consumer protection. Implications in medico-legal cases.
- 10. Communication skills with colleagues, teachers, patient's, and patient's relatives.
- 11. Principles of Anaesthesia audit understanding the audit process and outcome; methods adopted for the same.
- 12. Principles of Evidence Based Medicine and its application in anaesthetic practice.
- 13. Medical Ethics/social responsibilities of the anesthesiologists.
- 14. Record keeping: Ability to keep records as scientifically as possible; with the knowledge of computer.

Technical Skills to be Acquired:

The list within the tables indicates the procedures that the student should by the end of the course, be able to perform independently (PI) by himself / herself, should have performed with assistance (PA) should have observed (O) or assisted (A) during the course.

Skills may be considered under the following headings:

- 1. Basic Graduate Skills.
- 2. Anaesthesia procedures.
- 3. Critical care procedures.
- 4. Emergency room procedures.
- 5. Pain alleviation procedures.
- 6. Special monitoring techniques.

1) Basic Graduate Skills:

The student should have acquired certain skills during his under graduation and internship. There skills have to be reinforced at the beginning of the training period. They include;

1) Basic Graduate Skills	Category	Year	No.
Recording of vital signs.	PI	I	200
Insertion of intravenous lines	PI	Ι	100
Insertion of nasogastric tubes	PI	Ι	25
2) Anaesthesia Procedures:			
Airway insertion			
Oropharyngeal	PI	I/II	100/100
Nasopharyngeal	PI	I/II	25/25
Intubation			
Orotracheal intubation	PI	I/II	50/100
Nasotracheal Intubation	PI	I/II	25/50

Endobronchial (Double lumen tube)	Ο	11	05
Retrograde intubation	Ο	II	02
Fiber optic intubation	Ο	II	02
LMA			
LMA insertion	PI	I/II	25/25
Intubating LMA	Ο	II	02
Subarachnoid block	PI	I/II	50/100
Epidural block	PI	1/11	15/50
Caudal block	PI	1/11	05/05
Brachial plexus block	PI	II	05
Wrist block	PI	II	02
Ankle block	PI	II	02
Popliteal block	PI	II	02
Intercostal nerve block	PI	II	02
Intravenous regional analgesia	PI	II	05
Three in one block	Ο	II	02
Rectus sheath block	Ο	II	02
Hernia block	PI	II	05
Major anaesthesia procedures	PI	I/II	50/150
Minor anaesthesia procedures	PI	I/II	50/150
3) Critical Care Procedures:			
Insertion of arterial lines	PI	II	02
Insertion of central venous lines	PI	II	05
Intercostal drainage	Ο	II	05
Tracheostomy	Ο	II	05

Ventilatory management of patients	PI	II	10
Sampling for and interpretation of ABG	PI	II	05
Correction of electrolyte imbalance	PI	II	10
Fiber-Optic Bronchoscopy	Ο	II	05
Cricothyrotomy	Ο	II	05
Insertion of pulmonary artery catheter	Ο	II	05
4) Emergency Room Procedures:			
Management of airway obstruction	PI	II	20
Management of shock	PI	II	20
Management of respiratory failure	PI	II	05
Cardio Pulmonary Resuscitation (BLS)	PI	II	05
Advanced Cardiac Life Support (ACLS)	PI	II	05
5) Pain Alleviation Procedures:			
Pain management			
Post Anesthesia Care Unit (PACU)	PI	1/11	50/100
Post operative wards	PI	1/11	50/100
Labour analgesia	PI	II	50
Under radiographic guidance			
Stellate ganglion block	PA	II	02
Coeliac ganglion block	PA	II	02
Trigeminal nerve block	Ο	II	02
Neurolysis and other nerve ablation procedures	0	II	05
Ultrasound guided nerve block	Ο	II	05
6) Special Monitoring Techniques			
Bi-Spectral Index (BIS)	0	II	05

Nerve stimulator	0	II	05
Invasive Blood Pressure monitoring (IBP)	0	II	05
Pulmonary Artery Pressure monitoring (PAP)	0	II	05
Central Venous Pressure monitoring (CVP)	0	II	05
Trans Esophageal Echocardiography (TEE)	0	II	05

Teaching and Learning Activities

A candidate pursuing the course should work in the institution as a full time student. No candidate should be permitted to run a clinic/laboratory/nursing home while studying postgraduate course. Each year should be taken as a unit for the purpose of calculating attendance.

Every student shall attend teaching and learning activities during each year as prescribed by the department and not absent himself / herself from work without valid reasons.

A list of teaching and learning activities designed to facilitate students acquire essential knowledge and skills outlined is given below. Depending on the facilities available, following methods may be employed.

- **1.** Lectures: Lectures are to be kept to a minimum. They may, however, be employed for teaching certain topics. Lectures may be didactic or integrated.
 - a) Didactic Lectures: Recommended for selected common topics for postgraduate students of all the specialities. Few topics are suggested as examples:
 - 1) Applied anatomy, applied physiology.
 - 2) Initial introductory lectures about anesthesia subject.
 - 3) Use of library
 - 4) Medical code of conduct and medical ethics.
 - 5) National health and disease control programs.
 - 6) Communication skills etc.

These topics may preferably taken up in the first few weeks of the 1st year.

b) Integrated Lectures: These are recommended to be taken by multidisciplinary teams for selected topics, e.g. Applied Anatomy, Applied Physiology, etc.

- 2. Journal Club: All the PG students are expected to attend and actively participate in discussion and enter in the logbook relevant details.
- **3. Subject seminar:** Recommended to be held as for the norms of MCI rules. All the PG students are expected to attend and actively participate in discussion and enter in the logbook relevant details. The presentations would be evaluated using checklists and would carry weightage for internal assessment (See checklist in Chapter IV). A time table for the subject with names of the student and the moderator should be scheduled at the beginning of the every term.
- **4. Student Symposium:** Recommended as an optional multi-disciplinary programme. The evaluation may be similar to that described for subject seminar.
- 5. Ward Rounds: May be service rounds or teaching rounds.
 - a) Service Rounds: Postgraduate students should do ward rounds every day.

i) for pre anaesthetic evaluation of the patients posted for operation.

ii) and to do the post anaesthetic follow up of operated patients for alleviation of post-operative pain and for diagnosis and management if any of the postoperative anaesthesia complications.

b) Teaching Rounds: Every unit should have grand round for teaching clinical methods and pre anaesthetic evaluation.

Entries of (a) and (b) should be made in the logbook.

- 6. Mortality & Morbidity Meetings: Recommended once a month for all postgraduate students. Presentation be done by rotation and by the students who had conducted/assisted anaesthetic management.
- 7. Inter Departmental Meetings: Strongly recommended particularly with departments of surgery and medicine at least once in three months. These meetings should be attended by postgraduate students and relevant entries must be made in the logbook.
- 8. Continuing Medical Education Programmes (CME): At least one state / national level CME programs should be attended by each student in 2 years.
- **9. Conferences:** Attending conferences is optional. However, participation and presentation of scientific paper should be encouraged.

Rotation and Posting in other Departments

The listed knowledge and skills are to be learnt over a period of 2 years. The

process is a continuous one. However, the recommended period and timing of training in basic sciences, allied departments and speciality departments are given below. The total duration of postings in allied and subspecialties will be 6 months and the remaining 1 year and 6 months in the mother department.

Basic Sciences: Rotation in these departments viz., Anatomy, Physiology, Pharmacology etc. are to done as concurrent studies during the 1st year of training. Basic Science relevant to Anaesthesia can be studied in the respective departments in the afternoons.

Anatomy: Special emphasis for cadaveric observation of dissected parts of larynx, trachea, heart, various nerves and plexuses.

Physiology: To attend brief lectures on all the systems, in particular Cardio Vascular System and Respiratory System.

Pharmacology: Lectures on drugs used in anaesthesia and drugs used for management of systemic disease and drug interactions.

Allied Speciality: Students should be posted to Intensive Care Unit (ICU), Intensive Cardiac Care Unit (ICCU), Surgical Intensive Care Unit (SICU), Trauma and Emergency Medical Services unit and pain clinic during 2nd year of training for one week in each, for total duration of one month.

Other Subspecialties of Anaesthesia:

Posting to other subspecialty departments will be during 2nd year and the duration of postings are as under:

Cardiothoracic surgery, Cardiac Cath Lab	—	3 weeks
Neuro surgery	_	3 weeks
Paediatric surgery	_	2 weeks
Cancer surgery	_	2 weeks
Oromaxillary surgery	_	2 weeks
Plastic surgery	_	2 weeks
Urology	_	2 weeks
Laproscopic and Endoscopic surgery	_	2 weeks
Anaesthesia for investigative procedure like CT Scan, Lithotripsy.	_	2 weeks

20 weeks

Year-wise Structured Training Schedule

First Year:

- 1. Orientation programs and basic sciences related to anesthesiology: Theoretical knowledge, frequent visits to anatomy dissection halls and museum, physiology laboratories etc., to revise the relevant subjects.
- 2. Theoretical knowledge of anesthesiology and resuscitation: Special emphasis on clinical examination of patients, learning clinical methods, arriving at correct diagnosis.
- 3. Basic knowledge about

Computers in Anaesthesia, Medline, Internet.

Bio Statistics.

Medical Audit.

Medico-legal aspects.

Research Methodology.

Evidence Based Medicine.

Medical Ethics and Social responsibilities of anesthesiologists

- 4. Anaesthesia Skills
- Pre anaesthetic evaluation / under supervision.
- Monitoring of patients through out perioperative period. Becomes skilled in using and interpreting the following routine noninvasive monitors intra operatively
- Electro Cardiography (ECG) with ST segment analysis
- Noninvasive blood pressure monitoring (NIBP)
- Capnograph: values and changes in waveform
- Pulse-oximetry: values and changes in waveform
- Neuromuscular blockade monitor
- Central Venous Pressure, values and waveform
- Assisting setting up of anaesthesia machine, monitor and ventilator.

- Assisting the conduct of anaesthesia for major surgeries; knowledge about the complications of anaesthesia.
- Assisting for short anaesthesia initially and later on doing independently under supervision
- Conduct of anaesthesia Out Patient Department (OPD).
- Cardio Pulmonary Resuscitation (CPR) training and mastering of Basic Life support (BLS) and Advanced Cardiac Life Support (ACLS).

Second Year:

- 1. Theoretical knowledge of allied subjects, subspecialties of anaesthesia. Assisting senior anesthesiologists in specialized branches like pediatric surgery, cardio thoracic surgery, critical care trauma etc.
- 2. Anaesthetic Skills: At the end of 2nd year the student should be capable of;
 - a) Anaesthetizing patients without assistance but under supervision.
 - b) Identifying the complication of anaesthesia and manage them independently but under supervision.
 - c) Setting up of anaesthesia machine, monitor and ventilator independently.
- 3. Conference & Workshops: Attending one state level/one national level conference/CME and encouragement should be given to present a scientific paper.
- 4. The student should be actively involved in presentation of seminars, journal clubs, case presentation/discussions.
- 5. The student should be well versed with basics, allied subjects and recent advances in

the respective fields.

- 1. Anaesthesia Skills: At the end of the 2nd year the candidate should be able to make independent decisions as regards anaesthesia, pain management and postoperative care of all kinds of patients.
- 2. The student must get expertise in the specialized procedures as noted in the course content table.

Monitoring Progress of Studies

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring to be done by the staff, based on the participation of students in various teaching / learning activities. It may be structured or assessment being done using checklists that assess various aspects. Checklists are given in Chapter IV.

The learning outcomes to be assessed should included: (i) personal attitudes, (ii) acquisition of knowledge, and (iii) clinical and operative skills.

i) Personal Attitudes. The essential items are:

- Caring attitudes
- Initiative
- Organizational ability
- Potential to cope with stressful situations and undertake responsibility
- Trust worthiness and reliability
- To understand and communicate intelligibly with patients and others
- To behave in a manner which establishes professional relationships with patients and colleagues
- Ability to work in team

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) Acquisition of Knowledge: The methods used comprise of 'Log Book' which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The log book should periodically be validated by the supervisors.

Seminars / Symposia: The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio- visual aids are to be assessed using a checklist (see Model Checklist-II, Chapter IV)

Clinico-Pathological Conferences (CPC): This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic

problems by using an analytical approach. The presenter(s) are to be assessed using a checklist similar to that used for seminar.

iii) Clinical skills:

Day to Day work: Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Chapter IV).

Clinical meetings: Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist IV, Chapter IV).

Clinical and Procedural skills: The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the log book. (Table No.3, Chapter IV)

iv) Periodic tests: The departments may conduct two tests, one of them be at the end of first year and the other in the second year three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce.

v) Work diary / Log Book- Every candidate shall maintain a work diary and record his/her participation in the training programs conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

vi) Records: Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.

Log book

The log book is a record of the important activities of the candidates during his training, Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate.

Format for the log book for the different activities is given in Tables 1, 2 and 3 of Chapter IV. Copies may be made and used by the institutions.
Procedure for defaulters

Every department should have a committee to review such situations. The defaulting candidate is counselled by the guide and head of the department. In extreme cases of default the departmental committee may recommend that defaulting candidate be withheld from appearing the examination, if she/he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

Scheme of Examination

A) Theory:

Written examination shall consist of three question papers each of three hours duration. Each paper shall consist of two long questions carrying 20 marks each and 6 short essay questions each carrying 10 marks. Total marks for each paper will be 100. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

Paper I - Basic Science as applicable to Anaesthesia.

- 1. Applied Anatomy.
- 2. Applied Physiology.
- 3. Applied Pharmacology.
- 4. Applied Physics.
- 5. Applied Biochemistry.
- 6. History of Anaesthesia.

Paper II - Clinical Practice of Anaesthesia.

- 1. Cardio Vascular System.
- 2. Respiratory System.
- 3. Neuro Surgery.
- 4. Paediatrics
- 5. Obstetrics & Gynecology.
- 6. Orthopaedics.
- 7. Renal & Hepatic System.
- 8. Ophthalmology.

Paper III - Clinical Practice of Anaesthesia.

- 1. ENT
- 2. Endocrines.
- 3. Geriatrics
- 4. Out patient anaesthesia and dental anaesthesia.
- 5. Critical care includes Basic Life Support (Cardio Pulmonary Resuscitation), Post operative care of all surgical patients, Management of poisoning, snake bite, unconscious patients. Respiratory therapy.

Note: The distribution of chapters / topics shown against the papers are suggestive only.

B) Clinical Examination: 200 marks

It should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine and present at least one long case (carrying 100 marks) and two short cases (each carrying 50 marks). The total marks for clinical examination shall be 200.

C) Viva-Voce: 100 marks

Viva-Voce examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills & the total marks shall be 100 and the distribution of marks shall be as under;

All examiners will conduct viva-voce conjointly on candidate comprehension, analytical approach expression and interpretation of data. It includes all components of course contents.

In addition the candidate may also be given, instruments/equipments, X-ray images, ABG reports, ECG strips, Drugs, Ultrasound/Echocardiography reports and specimen.

Maximum marks for Diploma	Theory	Practical	Viva- voce	Grand Total
Anaesthesiology	300	200	100	600

Recommended Books and Journals

Books:

Aflee Complications in Anaesthesia 2/e BI Publications Pvt. Ltd. 2006

Atkinson RS, Rushman GB and Lee J. A Synopsis of Anaesthesia 11/e Wright - PSG 1993

Aitkenhead AR et al, Clinical Anesthesia. Churchill Livingstone 1995

Aitkenhead AR et al, Textbook of Anaesthesia. 2/e, Churchill-Livingstone 1990

Aiteknhead et al, Textbook of Anesthesia 5/e, BI Publications Pvt. Ltd. 2007

Atkinson RS, Rushman GB, and Lee J., Synopsis of Anaesthesia. 13/e, BI Publications Pvt Ltd. 2006

Bonner, Clinical Data Interpretation in anaesthesia and intensive care, BI Publications Pvt Ltd. 2002

Blunt, Anaesthesia Viva 2, 2/e BI Publications Pvt. Ltd. 2005

Braveman, Obsteric and Gynecologic Anaesthesia, BI Publications Pvt Ltd. 2006

Brown, Atlas of Regional Anaesthesia 3/e, BI Publications Pvt Ltd., 2006

Black SM, et al., Essential Anatomy for Anesthesia, Churchill Livingstone, 1998

Barash PG, et al, eds. Clinical Anesthesia. 4/e, Lippincott Williams and Wilkins, 2006

Butterworth, TEE Pocket Manual, BI Publications Pvt. Ltd., 2007

Bernstein RL, et al., Manual of Orthopedic Anesthesia and Related Pain Syndromes. Churchill Livingstone, 1993

Bonica JJ, et al, Management of Pain. 2/e, Lea & Febiger, 1990

Collins VJ, et al, Principles of Anesthesiology. 3/e, Lea & Febiger, 1992

Casasola, Cancer pain, BI Publications Pvt Ltd., 2006

Capan LM, et al, Trauma Anesthesia and Intensive Care, Lippincott, 1990

Chelly, Peripheral nerve blocks 2/e, BI Publications Pvt Ltd., 2004

Cheng, Perioperative care in cardiac anaesthesia, BI Publications Pvt Ltd., 2004

Corke, Companion To clinical anaesthesia exams 2/e, BI Publications Pvt. Ltd., 2006

Cucci, Clinical Neuroanaesthesia 2/e, BI Publications Pvt. Ltd., 1997

Chan, ECG in emergency medicine and acute care, BI Publications Pvt. Ltd., 2004

Davis PD, et al., Basic Physics and measurements in Anaesthesia, 5/e, BI Publications Pvt. Ltd, 2005

Collins VJ, et al, Physiologic and Pharmacologic Bases of Anesthesia, Williams and Wilkins, 1996

Cucchiara RF, et al, Clinical Neuroanesthesia. 2/e, Churchill Livingstone, 1997

Diepenbrock, Quick reference to critical care 3/e, BI Publications Pvt. Ltd., 2007

Davies, Lee Synopsis of Anesthesia, 13/e, BI Publications Pvt. Ltd., 2006

Duke, Anesthesia Secrets, 3/e, BI Publications Pvt. Ltd., 2006

Dunn, Clinical Anaesthesia procedures of the Massachusetts general hospital, 7/e, BI Publications Pvt. Ltd. 2007

Dureja, Regional Anaesthesia and pain management, BI Publications Pvt. Ltd., 2000

Dundee JW, et al., Intravenous Anaesthesia. 2/e, Churchill Livingstone, 1988

Davey A et al, Ward's Anaesthetic Equipment, 3/e. Saunders, 1992

Dorsch JA, et al, Understanding Anesthesia Equipment 4/e, Williams & Wilkins, 1999

Ellis H, et al., Anatomy for Anesthetists 8/e, BI Publications Pvt. Ltd. 2005

Fee, Pharmacology for anesthesiologists, BI Publications Pvt. Ltd. 2005

Fleisher, Anaesthesia and uncommon diseases, 5/e, BI Publications Pvt. Ltd., 2005

Gaiser, Blue Prints Pocket: Anaesthesiology, BI Publications Pvt. Ltd., 2007

Geraldine, Trauma & Orthopedic anaesthesia, BI Publications Pvt. Ltd. 2005

Gills JP, et al., Ophthalmic Anesthesia, SLACK, 1992

Gregory GA, et al., Pediatric Anesthesia, 4/e, Churchill Livingstone, 2001

Greene NM, et al, Physiology of Spinal Anesthesia, 4/e, Williams and Wilkins, 1992

Hagberg, Benumol's Airway Management, 2/e, BI Publications Pvt. Ltd., 2007

Healey, Wylie and CI Davidson's practice of Anaesthesia, 7/e, BI Publications Pvt. Ltd. 2004

Hugh Hemmings, Foundations of Anaesthesia, 2/e,BI Publications Pvt. Ltd. 2006

Jacob, Understanding Pediatric Anaesthesia, BI Publications Pvt. Ltd. 2006

Jaffie, Anesthesiologist's Manual of Surgery Procedures, 3/e, BI Publications Pvt. Ltd. 2003

Kaplan, Vasular Anaesthesia, 2/e, BI Publications Pvt. Ltd. 2004

Kaplan, Kaplan's Cardiac Anaesthesia, 5/e, BI Publications Pvt. Ltd. 2006

Kirby RR, et al, Clinical Applications of Ventilatory Support, Churchill Livingstone, 1990

Lake, Pediatric Cardiac Anaesthesia, 4/e, BI Publications Pvt. Ltd. 2005

Linton, Understanding pain for better clinical practice, BI Publications Pvt. Ltd. 2005

Linden, Manual of overdoses and poisoning, BI Publications Pvt. Ltd. 2005

Marcus, Chronic pain: A primary care guide to practical management, BI Publications Pvt. Ltd. 2006

Marian, Critical Care Medicine, 3/e, BI Publications Pvt. Ltd. 2006

Marino, et al, The ICU Book, 3/e, BI Publications Pvt. Ltd. 2006

Mcmahon, Wall & Melzacks textbook of pain, BI Publications Pvt. Ltd. 2006

Motoyama, Smith Anaesthesia Infant and children, 7/e, (with DVD) BI Publications Pvt. Ltd. 2006

Morgan GE, et al, Clinical Anesthesiology, 3/e, Lange, 2001

Miller RD, et al, Anesthesia. 6/e, Churchill Livingstone 2005

Morton, Critical Care Nursing 8/e, BI Publications Pvt. Ltd. 2005

Mushin WW, et al, Physics for the Anesthetist, 4/e, Blackwell, 1987

Ramamurthy, Decision making in pain management, 2/e, BI Publications Pvt. Ltd., 2006

Rathmel. Atlas of image guide interventional regional, BI Publications Pvt. Ltd., 2005

Reed, Clinical Cases in Anaesthesia, 3/e, BI Publications Pvt. Ltd. 2004

Romo, Anesthetic Facial Plastic Surgery, BI Publications Pvt. Ltd. 2006

Rosenbaum, Management of common medical conditions, An issue of Anaesthesiology clinics, BI Publications Pvt. Ltd. 2006

Shorten, Postoperative pain management, BI Publications Pvt. Ltd. 2006

Slonim, Pediatric Critical Care Medicine, BI Publications Pvt. Ltd. 2006

Springman, Ambulatory anaesthesia, BI Publications Pvt. Ltd.2006

Springhouse, ACLS Review made incredibly easy, BI Publications Pvt. Ltd. 2006

Springhouse, Respiratory care made incredibly easy, BI Publications Pvt. Ltd. 2004

Stoelting RK, et al, Anesthesia and Co-Existing Disease 5/e, BI Publications Pvt. Ltd. 2007

Saidman LJ, et al, Monitoring in Anesthesia, 3/e, Butterworth, 1993

Smith G. and Aitkenhead AR, Text book of anaesthesia 2/e, Churchill Livingstone, 1990

Stoelting RK, Basics of Anesthesia, 4/e, BI Publications Pvt. Ltd., 2004

Stene JK, et al, Trauma Anesthesia, Williams & Wilkins, 1990

Smith RM, Anesthesia for Infants and Children, 5/e, C.V. Mosby-Year Book, 1990

Snell RS, et al, Clinical Anatomy for Aanesthesiologists, Appleton and Lange, 1988

Stoelting RK, Pharmacology and Physiology in Anesthetic Practice, 3/e, Lippincott, 1999

Vukmir, Airway management in the critically ill, BI Publications Pvt. Ltd., 2002

White, Textbook of intravenous anaesthesia, BI Publications Pvt. Ltd.

White PF, et al, Ambulatory Anesthesia and Surgery, Saunders, 1997

White PF, et al, Outpatient Anesthesia, Churchill Livingston, 1990

Yentis, Anaesthesia and Intensive care A-Z, 3/e, BI Publications Pvt. Ltd., 2004

Yao FSF, et al, Yao and Artusio's Anesthesiology: Problem-Oriented Patient Management, 5/e, Lippincott Williams & Wilkins, 2003

Journals

Anaesthesia

Journal of Anesthesiology Clinical Pharmacology

Anesthesia & Analgesia

Anesthesiology

Indian Journal of Anaesthesia

Canadian Journal of Anaesthesia

British Journal of Anaesthesia

Acta Anaesthesiologica Scandinavica

Current Opinion in Anesthesiology

European Journal of Anesthesiology

International Anaesthesiology Clinics

Journal of Clinical Monitoring & Computing

Journal of Intensive Care Medicine

Journal of Neurosurgical Anaesthesiology

Pediatric Anaesthesia

Anaesthesiologic Clinics of North America

Asian Archives of Anaesthesiology and Resuscitation

Indian Journal of Critical Care Medicine

Annals of Emergency Medicine

Journal of Trauma-Injury Infection & Critical Care

The Pain Clinic

Pain Medicine

Critical Care Medicine

POST GRADUATE DIPLOMA COURSE IN OPHTHALMOLOGY (D.O.M.S)

I. GOALS:

The candidate shall be able to practice ophthalmology competently and safely in the community that he/she serves.

II. OBJECTIVES:

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The objectives may be considered under the subheadings.

- 1. Knowledge
- 2. Skills
- 3. Human values, ethical practice and communication abilities.

1. Knowledge:

- a. At the completion of the course, candidate should demonstrate sound knowledge of clinical manifestations of common ophthalmic diseases, including emergency situations and investigative procedures to confirm the diagnosis.
- b. Demonstrate comprehensive knowledge of various modes of treatment, both medical and surgical.
- c. Be aware of his or her own limitations to the application of the specialty in situations which warrant referral to more qualified centers or individuals.
- d. Periodically self assess his or her performance and keep abreast with ongoing advances in the field and apply the same in his /her practice.

2. Skills:

a) On the completion of the course, the candidate shall be able to offer to the community, the current quality of 'standard of care' in ophthalmic diagnosis as well as therapeutics, medical or surgical, in most of the common and easily managed situations at the District or Secondary level of health service.

b) Apply research and epidemiological methods during his / her practice. The candidate shall be able to present or publish work done by him/her.

3. Human values, Ethical practice and Communication abilities

- Adopt ethical principles in all aspects of his/her practice; professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.
- Provide leadership and get the best out of his team in a congenial working atmosphere.
- Apply high moral and ethical standard while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed,
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

III. COURSE CONTENTS:

1) Basic Sciences:

- i. Anatomy of the Eye and Adnexa
 - a. Gross anatomy
 - b. Histology
- ii. Physiology of the Eye
- iii. Pathology
 - a. General pathology
 - b. Ocular pathology: Gross pathology, Histopathology.
- iv. Biochemistry:
 - a. General Biochemistry,
 - b. Biochemistry applicable to ocular function,

- v. Microbiology
 - a. General Microbiology
 - b. Specific microbiology applicable to the eye
 - c. Immunology with particular reference to ocular immunology
- vi. Geometric and ophthalmic optics
 - a. Basic physical optics
 - b. Ophthalmic optics
 - c. Applied optics including optical devices

2. Clinical Ophthalmology

- 1. Disorders of Refraction
- 2. Disorders of the Lids
- 3. Disorders of the Lacrimal System
- 4. Disorders of the Conjunctiva
- 5. Disorders of the Sclera
- 6. Disorders of the Cornea
- 7. Disorders of the Uveal Tract
- 8. Disorders of the Lens
- 9. Disorders of the Retina and Vitreous
- 10. Disorders of the Optic Nerve & Visual Pathway
- 11. Disorders of the Orbit
- 12. Glaucoma
- 13. Ophthalmic Oncology
- 14. Neuro ophthalmology
- 15. Paediatric ophthalmology
- 16. Systemic ophthalmology (Ocular involvement in systemic disease)

- 17. Strabismus
- 18. Ocular Trauma
- 19. Community Ophthalmology
- 20. Visual rehabilitation
- 21. Lasers in Ophthalmology
- 22. Ocular Therapeutics

ii) CLINICAL

Essential Clinical skills - instrumentation

Refraction:

- a. Retinoscopy
- b. Subjective and objective refraction
- c. Use of Jackson's cross-cylinder
- d. Auto refractometer

Slit Lamp Examination:

- a. Diffuse examination
- b. Focal examination
- c. Retroillumination direct & indirect
- d. Sclerotic scatter
- e. Specular reflection
- f. Staining modalities and interpretation

Slit Lamp Accessories:

- a. Applanation Tonometry
 - i. Goldman's applanation tonometer
 - ii. Gonioscopy

- Single mirror / 3 mirror gonioscope
- Grading of the angle
- Testing for occludability
- Indentation gonioscopy
- Four Mirror Gonioscope

Direct Ophthalmoscopy

- Distant direct Ophthalmoscopy
- Detailed fundus examination
- Use of filters and graticule

Indirect Ophthalmoscopy

- Fundus evaluation including scleral depression
- Fundus drawing capability
- Use of filters provided

Optical Coherence Tomography

- Principle
- Uses
- Interpretation

Slit Lamp Fundus Examination

- 3-mirror examination of the fundus
- 78-D/90-D/60-D examination

Tonometry

- Applanation tonometer
- Indentation (commonly Schiotz)

Keratometry

- Performance & interpretation of keratometry
- Diagnosis of situations such as keratoconus
- Keratoscopy

Assessment of epiphora

- Jone's dye test
- Syringing performance & interpretation

Dry eye evaluation

- Schirmer test
- Rose Bengal staining
- Tear film breakup time
- Tear meniscus evaluation

Corneal ulceration

- Taking a corneal scraping
- Inoculation into media
- Evaluation of Gram's stain
- Evaluation of KOH preparation

Colour vision evaluation

• Ishihara pseudoisochromatic plates

Use of Amsler's Grid

• Instructing in the use of and interpretation of the chart.

Fundus photography & fundus fluorescein angiography (FFA, FAG)

- Performance and interpretation of FFA
- Performance of indirect fluorescein angioscopy

Diagnosis & assessment of Squint

- Ocular position and motility examination
- Versions, ductions and vergences
- Convergence facility estimation
- Cover / Uncover / Alternate cover test
- Use of prism bars or free prisms in assessment of squint
- Use of Bagolini's striated glasses / red filters / Maddox rod
- Use of Worth's four dot test
- Use of major amblyoscope
- Use & interpretation of the Hess chart / Lees' screen
- Use of synoptophare

Exophthalmometry

• Measurement of proptosis or exophthalmos

Use and evaluation of ophthalmic ultrasound

- A- Scan ultrasound with biometry
- B- Scan ultrasound examination

Perimetry

- Kinetic Goldmann Perimetry
- Static computerized perimetry
- Interpretation of common field defects

Radiology

Interpretation of plain skull films :

- PA-20 (Caldwell's view)
- PNS (Water's view)

- Lateral
- Submentovertical
- Optic canal views

Localisation of intra ocular and intra orbital foreign bodies

Interpretation of CT – Scans of Orbit and Eye

Contact Lenses

- a. Assessment
- b. RGP fitting
- c. Soft lens fitting
- d. Troubleshooting

Low Vision aids

a. The basics of fitting with knowledge of availability & cost.

iii) SURGICAL

Essential surgical skills

Procedure	Nature	Nature of activity * & number			
	0	A	PA	PI	
1. Operation theatre					
a. Anaesthesia:					
i. Retrobulbar anaesthesia				15	
ii. Peribulbar anaesthesia				15	
iii. Facial blocks					
* O' Brein				15	
* Atkinson				15	
* Van Lint & modifications				2	
iv. Frontal blocks				1	
v. Infra orbital blocks				1	
vi. Blocks for sac surgery				3	
b. Magnification: Familiarity with the use of					
Operating microscope is essential					

c. Lid Surgery:			
i. Tarsorrhaphy	 		5
ii. Ectropion and entropion procedures	 		1
iii. Lid repair following trauma	 	1	-
iv. Epilation,	 		5
d. Destructive procedures:			
i. Evisceration with or without implant	 	-	1
ii. Enucleation with or without implant	 		3
e. Sac Surgery			
i. Dacrocystectomy	 		2
ii. Dacryocystorhinostomy	 		1
iii. Probing	 	1	

* The procedures that the student should have:

- O = Washed and Observed
- A = Assisted the operating surgeon
- PA = Performed with Assistance
- PI = Performed Independently

Procedure	Nature	Nature of activity * & number			
	0	A	PA	PI	
f. Extraocular muscle surgery					
i. Recession and resection procedures on the			1		
horizontal recti					
g. Cataract Surgery					
i. Stand ard ECCE with or without IOL				5	
implantation					
ii. Small incision ECCE with or without IOL				10	
implantation					
iii. Secondary AC or PC IOL implantation					
iv. Vectis extraction			1		
v. Phacoemulsification	\sim				
h. Orbit Surgery					
i. Anterior Orbitotomy		1			
ii. Lateral Orbitotomy	√				
i. Vitrectous surgery					
i. Anterior Open sky vitrectomy			√		
ii. Pars Plana vitrectomy	√				
iii. Intravitreal Injections			3	2	
j. Keratoplasty					
i. Penetrating keratoplasty		-1-			
k. Glaucoma Surgery					
i. Trabeculectomy			<u> </u>	1	
ii. Iridectomy			↓ √		
iii.Cyclocryotherapy				1	

* The procedures that the student should have:

- O = Washed and Observed
- A = Assisted the operating surgeon
- PA = Performed with Assistance
- PI = Performed Independently

Procedure	Nature	of activit	ty * & nu	mber
	0	A	PA	PI
I. Surface ocular procedures				
i. Pterygium excision with modifications				2
ii. Conjunctival grafting			1	
iii. Amniotic Membrance Graft		3		
m. Tarsorrhaphy				5
2. Out patient:				
a. Manual diagnostic procedures such as				5
syringing, conjunctival swab collection,				
conjunctival scraping, corneal scraping,				
Grams's staining, KOH preparation etc.				
b. Conjunctival and corneal foreign body				5
removal on the slit lamp				
c. Chalazion incision and curettage				5
d. Suture removal : skin, conjunctival,				3
corneal, and corneoscleral				
e. Subconjunctival injection				8
f. Posterior sub-Tenon's injections				2
g. Artificial eye fitting				2

* The procedures that the student should have:

- O = Washed and Observed
- A = Assisted the operating surgeon
- PA = Performed with Assistance
- PI = Performed Independently

RESEARCH

Essential Research Skills

- 1. Record keeping
 - a. The ability to maintain records as scientifically as possible
 - b. Knowledge of computer software is helpful
- 2. Basic statistical knowledge

- a. Ability to undertake clinical & basic research
- b. Descriptive and Inferential statistics
- c. Ability to publish results of one's work
- 3. Ability to constructively criticize publications in the field.
- 4. Presentation: Ability to present one's work effectively at various scientific conferences.

MISCELLANEOUS

- A. Community Ophthalmology
 - a. Ability to organize institutional screening
 - b. Ability to organize peripheral eye screening camps
 - c. Knowledge and ability to execute guidelines of National Program for

Prevention of Blindness.

- B. Organisational capabilities
 - a. Ability to organize meetings, seminars and symposia

b. Ability to get along with colleagues and work as a team with the other members of the department.

c. Ability to interact with and work as team with other disciplines that may exist in the same hospital.

- C. Teaching
 - a. The ability to pass on skills acquired to one's juniors, theoretical,

procedural and surgical

IV. TEACHING AND LEARNING ACTIVITIES:

A) Theoretical Teaching:

1. Lectures: Lectures are to be kept to a minimum. Certain selected topics can be taken as lectures. Lectures may be didactic or integrated.

- 2. Journal Club: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book the relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A time table with names of the students and the moderator should be announced in advance.
- **3. Subject Seminar:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the subject with names of the students and the moderator should be announced in advance.
- **4. Case Discussion:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the case presentation with names of the students should be announced in advance.
- 5. Ward Rounds: Ward rounds may be service or teaching rounds.

Service Rounds: Postgraduate students should do service rounds every day for the care of the patients. Newly admitted patients should be worked up by the post graduate student and presented to the faculty members the following day.

Teaching Rounds: Every unit should have 'grand rounds' for teaching purpose at the bed side. A diary should be maintained for day-to-day activities by the post-graduate students.

Entries of (a) and (b) should be made in the Log book.

- 6. Clinico-Pathological Conference: Clinico-Pathological Conferences are to be conducted atleast once in a year.
- 7. Inter Departmental Meetings: There will be interdepartmental clinical meetings with Neuro-Medicine, Dermatology and Paediatrics departments once in a month.

- 8. Teaching Skills: Post-graduate students must teach under graduate students (eg.Medical, Nursing) by taking demonstrations, bedside clinics, tutorials, lectures etc. Assessment is made using a checklist by medical faculty as well as by the students. Record of their participation is to be kept in Log Book. Training of postgraduate students in Educational Science and Technology is recommended.
- **9. Continuing Medical Education Programmes (CME):** Recommended that at least 1 state level CME programme should be attended by each student during the course.
- **10. Conferences:** Attending conference is compulsory. Post-graduate student should attend one national and one state level conference during the course.
- **11. Research Activities:** The Post-graduate students to be encouraged to carry out research activities in the department, institution or community.

B) Clinical / Practical Training:

1. Rotational Postings in other Departments:

The candidate would undergo training in related medical branches such as Plastic surgery, Neurology/ Neurosurgery, Intensive care unit, ENT, Pathology, Microbiology for a total duration of not exceeding two months

a) Trauma care unit	- one month
b) Rural posting	- one month
c) Sub – specialty posting	- one month
d) Anesthesia Posting	- 15 days
e) Plastic Surgery / Neuro Medicine	- 15 days
Total 4 months posting	

Additional Training Programme of PG students

- 1) A.L.S. Training Programme
- 2) Clinical Skill Lab Training.

- a) General Ophthalmic Skills
- b) Goat eye surgeries
- 3) Short Projects of Six months duration Student may be deputed for a month or so to institutions of excellent repute for the purpose of training in a sub-specialty field in ophthalmology.

V. Other Criteria to Fulfill for the Diploma Course:

6. Internal evaluation:

During the course of two years, the department will conduct two tests. Two of them will be annual, one at the end of first year and other at the end of second year. The second test wills a preliminary examination which may be held three months before the final examination. The test may include the written papers, practicals / clinicals and viva-voce. Records and marks obtained in such tests will be maintained by the head of the department and will be sent to the University when called for.

Results of all evaluations should be entered into P.G's logbook / diary and departmental file for documentation purposes. Main purpose of periodic examination and accountability is to ensure clinical expertise of students with practical and communication skills and balance broader concept of diagnostic and therapeutic challenges.

2. Maintenance of Log Book:

Every candidate shall maintain a Log book/work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any, conducted by the candidate. All the procedures performed by the post graduate students should be entered in the Log book. All the daily activities including the ward rounds and the routine procedures preformed on day to day basis should be entered in the Log book and it should be verified and signed by the faculty member. The Log book shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the University practical/clinical examination.

VI. SCHEME OF EXAMINATION:

Candidates will be allowed to appear for examination only if attendance (Minimum 80%) and internal assessment are satisfactory.

7. Theory: 300 Marks

There shall be three papers, each of three hours duration. Total marks of each paper will be 100. Questions on recent advances may be asked in any or all the papers. The format of each paper will be same as shown below.

Type of Questions	No. of	Marks for each question	Total Marks
	Questions		
Long essay	02	20	40
Short essay	06	10	60
Grand Total			100

Paper I :

- 1. Basic Sciences : Anatomy; Physiology; Pathology; Microbiology; Biochemistry
- 2. Optics and Refraction.
- 3. Strabismus and Pediatric ophthalmology
- 4. Ocular Pharmacology
- 5. Instrumentation and Investigations in Ophthalmology

Paper II :

6. Clinical ophthalmology I: Disorders of Conjunctiva, Cornea, Sclera, Uvea, Lens, Glaucoma, Retina, Optic nerve.

2. Clinical ophthalmology II Diseases of the Optic nerve .Disorders of Lids, Lacrimal system. Orbit. Ophthalmic oncology. Ocular Trauma.

Paper III :

- 1. Surgical Ophthalmology
- 2. Neuroophthalmology
- 3. Systemic ophthalmology

- 4. Community ophthalmology
- 5. Recent Advances

Note : The distribution of chapters/topics shown against the papers are suggestive only and may overlap or change.

B. Clinical Examination: 200 Marks

Type of Case	Number of Cases	Marks for each Case	Total
Long Case	01	100	100
Short Case	02	25	50
Fundus Case	01	25	25
Refraction Case	01	25	25
	G	RAND TOTAL	200

C. Viva- Voce Examination: 100 Marks

Aims: To elicit candidate's knowledge and investigative / therapeutic skills.

1). Viva-voce examination – [100 Marks]

All examiners will conduct viva – voce conjointly on the candidates' comprehension, analytical approach, expression and interpretation of data.

Viva-voce shall include questions on the following topics:

- a. Surgical instruments displayed
- b. Pathology slides and Pathology gross specimens
- c. Microbiology slides
- d. Radiographs /CT scan films
- e. Perimetric charts / Indirect ophthalmoscopy drawings / Hess screen charts/FFA films/ Ophthalmic ultrasound films
- f. General ophthalmology
- g. Community ophthalmology

D. Maximum Marks:

Maximum marks for	Theory	Practical	Viva	Grand Total
Diploma in Ophthalmology				
(DOMS)	300	200	100	600

Sr.	Name of the Textbook	Authors	Publisher
No.			
1.	Clinical Ophthalmology, Ist Ed. 1985	Duane T.D, Jaeger E.A.	Harper & Row
2.	Principles & Practice of Ophthalmology Clinical Practice, 3 rd Ed. 2008	Albert D.B, Jakobiec. F.A.	W.B. Saunders Company
3.	Principles & Practice of Ophthalmology, 1 st Ed. 1987	Peyman G.A.	Jaypee Brothers
4.	System of Ophthalmology, Ist Ed. 1973	Elder. I. Duke	Henry kimpton
5.	American Academy of Ophthalmology, Series 2006-2007		American Academy of Ophthalmology
6.	Ophthalmology, , 3 rd Ed. 2009	Yanoff M. Duker J.S.	Mosby – Wolfe
7.	Clinical Ophthalmology, 6 th Ed. 2007	Kanski. J.J.	Butterworth & Heinemann
	Anatomy:		
8.	Wolff's Anatomy of the Eye & Orbit, 8 th Ed. 1997	A.J.Bron, R.C.Tripathi, Brenda.J.Tripathi	Chapman & Hall Medical
9.	Clinical Anatomy of the Eye, 2 nd Ed. 1998	R.S.Snell, M.A.Lemp	Blackwell Science
	Physiology:		
10.	Adler's Physiology of the Eye – Clinical Application, 10 th Ed. 2003	P.L.Kaufman, Albert Alm	Mosby
	Pharmacology:		
11.	Havener's Ocular Pharmacology, 6 th Ed.	Thomas.F.Mauger, Elson.L.Graig	Mosby
	Ophthalmic Pathology		
12.	Ophthalmic Pathology – An Atlas & Text Book, 2 nd Ed. 1962	M.J.Hogan, L.E.Zimmermann	W.B. Saunders Company
13.	Ocular Pathology, 4 th Ed. 1996	Myron Yanoff, Ben.S.Fine	Mosby – Wolfe
	Cornea:		
14	Smalin & Thofts The Cornea, Scinetific,. 4 th Ed. 2005	Foster C.S., Azar. D.T	Lippin Cotts Williams – Wilkins

VII. RECOMMENDED BOOKS (Latest editions):

15	Graysons Diseases of the	Arffa R.C.	Mosby
16.	Corneal Disorders – Clinical Diagnosis &	H.M. Leibowitz	W.B. Saunders Company
	Glaucoma:		
17	The Glaucomas 2 nd Ed	Shields M B	Moshy
	1996		THOSE Y
18.	Manual of Glaucoma Diagnosis & management, Ist Ed. 1998	Krupin. T.	Churchill Livingstone
19.	Diagnosis & Treatment of the Glaucomas, 8 th Ed.	Becker's Shaeffer	Mosby
	Retinal Disease:		
20.	Retina, Ist Ed. 1989	Stephen Ryan	The C.V.Mosby Company
21.	Retinal Detachment, Ist Ed. 1990	Michels.R.G, Wilkinson C.P.	The C.V. Mosby Company
22.	Vitreous Microsurgery, 4 th Ed. 2007	Steve Charles	Lippincott, Williams & Wilkins
	Uvea:		
23.	Uveitis Fundamentals & Clinical Practice, 3 rd Ed. 2004	Nussenblatt.R.B, Whitecup.S.M.	Mosby
24.	Uveitis – A Clinical Approach to Diagnosis & Management, 2 nd Ed. 1989	Smith.R.E, Nozik.R.A.	Williams & Wilkins
	Neuroophthalmology:		
25.	Clinical Neuro- Ophthalmology, 1st Ed. 1971	Walsh	William – Heinemann
	Tumors:		
26.	Diagnosis & Management of Orbital tumors, Ist Ed. 1989	Jerry. A. Shields	W.B. Saunders Company
	Strabismus:		
27.	Binocular Vision & Ocular Motility, 5 th Ed. 1996	Von Noorden	Mosby
	Ultra Sound:		
28.	Ultrasound of the Eye &	Byrne.S.F,	Mosby
	Fundus Flourescein		
	Angiogranhy		
29	Shankar Nethralaya : Atlas of FFA 1 st Ed. 2004	Shetty N.S., Sharma T.	J.P. Brothers

	Ophthalmic surgery		
30	Atlas of Ophthalmic	Jaffe N.S.	Mosby – Inc
	Surgery 1 st Ed.		
	Biochemistry:		
31.	Biochemistry of the Eye	D.R.Whikehart	Butterworth – Heinemann
	Paediatric		
	Ophthalmology:		
32.	Paediatric Ophthalmology,	Kenneth Wright	Mosby
	Ist Ed. 1995		
	Refraction:		
33.	Duke Elder's Practice of	David Abraham	Butterworth Heinemann
	Refraction, 10 th Ed. 2002		
34.	Clinical Optics, 3 rd Ed.	Elkington A.R, Frank H.J.	Blackwell Science
	1999		

VIII. RECOMMENDED JOURNALS:

Sr. No.	Name of the Journal
1.	American Journal of Ophthalmology
2.	British Journal of Ophthalmology
3.	Indian Journal of Ophthalmology
4.	International Ophthalmology Clinics of North America
5.	Journal of Cataract & Refractive Surgery
6.	Eye (The Scientific journal of The Royal College of Ophthalmologist.

SECTION - III LOG BOOK / WORK DIARY

It is essential to monitor the learning progress of each candidate 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 be done using checklists that assess various aspects. Mode! checklists are given in this chapter which may be copied and used.

The learning out comes to be assessed should include: (i) Personal attitudes, (ii) Acquisition of knowledge, (iii) Clinical and operative skills, and (iv) Teaching skills.

i) Personal attitudes. The essential items are:

- Caring attitudes
- Initiative
- Organisational ability
- Potential to cope with stressful situations and undertake responsibility
- Trustworthiness and reliability
- To understand and communicate intelligibly with patients and others
- To behave in a manner which establishes professional relationships with patients and colleagues .
- Ability to work in team
- A critical enquiring approach to the acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) Acquisition of knowledge: The methods used comprise of 'Log Book' which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The log book should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities, if so, desired. **Journal Review Meeting (Journal Club):** The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist (see Model Checklist - I, Section 3)

Seminars / **Symposia:** The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth presentation skills and use of audio- visual aids are to be assessed using a : (see Model Checklist-II, Section 3)

Clinico-pathological conferences: This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a check list similar to that used for seminar.

Medical Audit: Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

iii) Clinical skills :

Day to Day work: Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Section 3).

Clinical meetings: Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist IV, Section 3).

Clinical and Procedural skills: The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the log book. (Table No.3, Section 3).

- **Teaching skills:** Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See Model checklist V, Section 3).
- v) **Periodic tests:** In case of degree courses of three years duration. The departments may conduct three tests, two of them be annual tests, one at the end of first and the other in the second year. The third test may be held three

months before the final examination. In case of diploma courses of two year duration, the departments may conduct two tests. One of them at the end of first year and the other in the second year three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce.

- vi) Work diary / Log Book: Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.
- vii) **Records:** Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the KAHER or MCI.

Log book

The log book is a record of the important activities of the candidates during his training. Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate.

Format for the log book for the different activities is given in Tables 1, 2 and 3 of Section 3. Copies may be made and used by the institutions.

Procedure for defaulters: Every department should have a committee to review such situations. The defaulting candidate is counselled by the guide and head of the department. In extreme cases of default the departmental committee may recommend that defaulting candidate be withheld from appearing at the examination, if she/he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

Formats of Check Lists

Check List-I.

MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Student:

Name of the Faculty/Observer:

Date:

SI. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Article chosen was					
2.	Extent of understanding of scope and objectives of the paper by the candidate					
3.	Whether cross references have been consulted					
4.	Whether other relevant publications consulted					
5.	Ability to respond to questions on the paper / subject					
6.	Audio-Visual aids used					
7.	Ability to defend the paper					
8.	Clarity of presentation					
9.	Any other observation					
	Total Score					

Check List-II.

MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

SI. No.	Items for observation during presentation	Poor	Below Average	Average	Good	Very Good
1.	Whether other relevant referal books consulted			2	3	4
2.	Whether cross references have been consulted					
3.	Completeness of Preparation					
4.	Clarity of Presentation					
5.	Understanding of subject					
6.	Ability to answer questions					
7.	Time scheduling					
8.	Appropriate use of Audio-Visual aids					
9.	Overall Performance					
10.	Any other observation					
	Total Score					

Check List-III

MODEL CHECK-LIST FOR EVALUATION OF CLINICAL WORK IN WARD / OPD

(To be completed once a month by respective Unit Heads including posting in other departments)

SI. No.	Points to be considered:	Poor	Below Average	Average	Good	Very Good
1.	Regularity of attendance	0		2	3	4
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations work up					
7.	Bedside manners					
8.	Rapport with patients and explaining relevance of anaesthesia, complications and taking informed consent.					
9.	Counseling patient's relatives for relevant anaesthesia procedures, if required blood donation and case follow up.					
10.	Over all quality of ward work					
	Total Score					

Check List-IV

EVALUATION FORM FOR CLINICAL PRESENTATION

Name	e of the Student: Name of th	ne Faci	ulty:		Date:	
SI. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Above Average 3	Very Good 4
1.	Completeness of history					
2.	Whether all relevant points elicited					
3.	Clarity of Presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of general physical examination					
7.	Whether all physical signs elicited correctly					
8.	Whether any major signs missed or misinterpreted					
9.	Diagnosis: Whether it follows logically from history and findings					
	Investigations required Complete list 					
10	 Relevant order 					
	 Interpretation of investigations 					
11.	Ability to react to questioning Whether it follows logically from history and findings					
12.	Ability to defend diagnosis					
13.	Ability to justify differential diagnosis					
14.	Others					
	Grand Total					

169

Check List - V

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

SI. No.	Points to be considered	Strong Point	Weak Point
1.	Communication of the purpose of the talk		
2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The sequence of ideas		
5.	The use of practical examples and/or illustrations		
6.	Speaking style (enjoyable, monotonous, etc., specify)		
7.	Attempts audience participation		
8.	Summary of the main points at the end		
9.	Asks questions		
10.	Answers questions asked by the audience		
11.	Rapport of speaker with his audience		
12.	Effectiveness of the talk		
13.	Uses Audio Visual aids appropriately		

Check List-VI

MODEL CHECK LIST FOR DISSERTATION PRESENTATION

Name	e: Facult	Faculty/observer:			Date:			
SI. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4		
1.	Interest shown in selecting a topic							
2.	Appropriate review of literature							
3.	Discussion with guide & other faculty							
4.	Quality of protocol							
5.	Preparation of Proforma							

Check List-VII

CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE / CO-GUIDE

Name of the Student:

Name of the Faculty/Observer:

Date:

S. No.	Items for observation during presentation	Poor	Below Average	Average	Good	Very Good
		0	1	2	3	4
1.	Periodic consultation with guide/co-guide					
2.	Regular collection of case material					
3.	Depth of analysis / discussion					
4.	Departmental presentation of findings					
5.	Quality of final output					
1.	Statistical Analysis					
2.	Others					
	Total Score					
Medical Ethics

Sensitization and Practice

Introduction

There is now a shift from the traditional individual patient, doctor relationship, and medical care. With the advances in science and technology and the needs of patient, their families and the community, there is an increased concern with the health of society. There is a shift to greater accountability to the society. Doctors and health professionals are confronted with many ethical problems. It is, therefore necessary to be prepared to deal with these problems. To accomplish the Goal (i), General Objective (ii) stated in Chapter II (pages 2.1 to 2.3), and develop human values it is urged that **ethical sensitization** be achieved by lectures or discussion on ethical issues, clinical case discussion of cases with an important ethical component and by including ethical aspects in discussion in all case presentation, bedside rounds and academic postgraduate programs.

Course Contents

- Introduction to Medical Ethics
 What is Ethics
 What are values and norms
 Relationship between being ethical and human fulfillment
 How to form a value system in one's personal and professional life
 Heteronomous Ethics and Autonomous Ethics
 Freedom and personal Responsibility
- 2. Definition of Medical Ethics

Difference between medical ethics and bio-ethics Major Principles of Medical Ethics 0

Beneficence	=	fraternity
Justice	=	equality
Self determination (autonomy)	=	liberty

Perspective of Medical Ethics
 The Hippocratic oath
 The Declaration of Helsinki
 The WHO Declaration of Geneva

International code of Medical Ethics (1993) Medical Council of India Code of Ethics

- *Ethics of the Individual*The patient as a person
 The Right to be respected
 Truth and Confidentiality
 The autonomy of decision
 The concept of disease, health and healing
 The Right to health
 Ethics of Behaviour modification
 The Physician Patient relationship
 Organ donation
- 5. The Ethics of Human life
 What is human life
 Criteria for distinguishing the human and the non-human
 Reasons for respecting human life
 The beginning of human life
 Conception, contraception
 Abortion
 Prenatal sex-determination
 In vitro fertilization (IVF), Artificial Insemination by Husband (AIH)
 Artificial Insemination by Donor (AID),
 Surrogate motherhood, Semern Intrafallopian Transfer (SIFT),
 Gamete Intrafallopian Transfer (GIFT), Zygote Intrafallopian Transfer (ZIFT),
- The Family and Society in Medical Ethics
 The Ethics of human sexuality
 Family Planning perspectives
 Prolongation of life
 Advanced life directives The Living Will
 Euthanasia
 Cancer and Terminal Care

- 7. Profession Ethics
 Code of conduct
 Contract and confidentiality
 Charging of fees, Fee-splitting
 Prescription of drugs
 Over-investigating the patient
 Low Cost drugs, vitamins and tonics
 Allocatison of resources in health cares
 Malpractice and Negligence
- Research Ethics
 Animal and experimental research / humanness
 Human experimentation
 Human volunteer research Informed Consent
 Drug trials
- 9. Ethical workshop of cases
 Gathering all scientific factors
 Gathering all human factors
 Gathering all value factors
 Identifying areas of value conflict, Setting of priorities, Working our criteria towards decisions

Recommended Reading

Francis C.M., Medical Ethics, 1 Ed, 1993, Jaypee Brothers, New Delhi.