

**REGULATIONS AND CURRICULUM
FOR
POSTGRADUATE DEGREE AND DIPLOMA COURSES**

2010

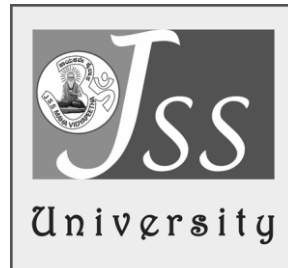


ANAESTHESIOLOGY

**JSS UNIVERSITY
JSS MEDICAL INSTITUTIONS CAMPUS
SRI SHIVARATHREESHWARA NAGARA, MYSORE 570 015
KARNATAKA, INDIA**

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Regulations & curriculum for Postgraduate Degree and Diploma Courses 2010

ANAESTHESIOLOGY

This book can be had from

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Postgraduate Medical Degree and Diploma Courses 2010

ANAESTHESIOLOGY

CONTENTS

	Page No
Chapter I	Regulations
Chapter II	Goals and General Objectives
Chapter III	Curriculum
	M D Anaesthesiology
	Diploma in Anaesthesiology
Chapter IV	Monitoring Learning Progress
Chapter V	Ethics

CHAPTER I

Regulations for Postgraduate Degree and Diploma Courses in Medical Sciences

1. Branch of Study

1.1 Postgraduate degree courses

Post Graduate Degree courses may be pursued in the following subjects:

a) MD (Doctor of Medicine)

- i) Anaesthesiology
- ii) Anatomy
- iii) Biochemistry
- iv) Community Medicine
- v) Dermatology, Venereology and Leprosy
- vi) Forensic Medicine
- vii) General Medicine
- viii) Microbiology
- ix) Pathology
- x) Paediatrics
- xi) Pharmacology
- xii) Physiology
- xiii) Psychiatry

b) MS (Master of Surgery)

- i) General Surgery
- ii) Obstetrics and Gynaecology
- iii) Ophthalmology
- iv) Orthopedics
- v) Oto-Rhino-Laryngology

1.2 Postgraduate Diploma Courses

Post Graduate Diploma Courses may be pursued in the following subjects:

- a) Anesthaesiology (DA)
- b) Child Health (DCH)
- c) Clinical pathology (DCP)
- d) Dermatology, Venerology and Leprosy (DDVL)
- e) Obstetrics and Gynaecology (DGO)
- f) Ophthalmology (DO)
- g) Orthopaedics (D Ortho)
- h) Oto-rhino-laryngology (DLO)
- i) Psychiatry (DPM)

2. Eligibility for Admission

MD / MS Degree and Diploma courses : A candidate affiliated to this University and who has passed final year MBBS examination after pursuing a study in a medical college recognized by the Medical Council of India, or from a recognized medical college affiliated to any other university recognized as equivalent thereto and 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 Medical Council, shall be eligible for admission.

3. Obtaining Eligibility Certificate by the University before making admission

No candidate shall be admitted for any Postgraduate Degree/Diploma courses unless the candidate has obtained and produced the eligibility certificate issued by the University. The candidate has to make an application to the University with the following documents along with the prescribed fee:

- a) MBBS pass/degree certificate issued by the university.
- b) Mark cards of all the university examinations passed before MBBS course.
- c) Attempt certificate issued by the Principal.
- d) Certificate regarding the recognition of the medical college by the Medical Council of India
- e) Completion of internship certificate.
- f) 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.
- g) Registration by any state Medical Council.
- h) Proof of ST/SC or Category I, as the case may be.

Candidates should obtain the eligibility certificate before the last date for admission as notified by the university.

A candidate who has been admitted to postgraduate course should register his / her name in the university 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 and GOI permissions in this regard.

5. Course of study

5.1 Duration

- a) **MD, MS Degree Courses:** The course of study shall be for a period of 3 years consisting of 6 terms.
- b) **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 degree/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, CPC 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. Basic medical sciences students should be posted to allied and relevant clinical departments or institutions. Similarly, clinical subjects' students should be posted to basic medical sciences and allied specialty departments or institutions.

7. Attendance, Progress and Conduct

- 7.1** A candidate pursuing degree/diploma course, should work in the concerned department of the institution for the full period as full time student. No candidate is permitted to run a clinic/laboratory/nursing home while studying postgraduate course, nor can he/she work in a nursing home or other hospitals/clinic/laboratory 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 University 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. 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 in the University practical/clinical examination.

- 8.2 Periodic tests:** In case of degree courses of three years duration (MD/MS, DM, M Ch.), the concerned departments may conduct three tests, two of them be annual tests, one at the end of first year and the other at the end of the second year. The third test may be held three months before the final examination. The tests may include written papers, practical / clinical and viva voce. Records and marks obtained in such tests will be maintained by the Head of the Department and sent to the University, when called for.
- 8.3** In case of diploma courses of two years duration, the concerned 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, practical / clinical and viva voce.
- 8.4 Records:** Records and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.

9. Dissertation

- 9.1** Every candidate pursuing MD/MS degree course is required to carry out work on a selected research project under the guidance of a recognised post graduate teacher. The results of such a work shall be submitted in the form of a dissertation.
- 9.2** The dissertation is aimed to train a post graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.
- 9.3** Every candidate shall submit to the Director (Academic) of the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within six months from the date of commencement of the course, on or before the dates notified by the University. The synopsis shall be sent through proper channel.
- 9.4** Such synopsis will be reviewed and the dissertation topic will be registered by the University. No change in the dissertation topic or guide shall be made without prior approval of the University.

9.5 The dissertation should be written under the following headings

- a) Introduction
- b) Aims or Objectives of study
- c) Review of Literature
- d) Material and Methods
- e) Results
- f) Discussion
- g) Conclusion
- h) Summary
- i) References
- j) Tables
- k) Annexure

9.6 The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the Institution.

9.7 Four copies of dissertation thus prepared shall be submitted to the Registrar (Evaluation), six months before final examination, on or before the dates notified by the University.

9.8 The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is an essential precondition for a candidate to appear in the University examination.

9.9 Guide: The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work is as per Medical Council of India, Minimum Qualifications for Teachers in Medical Institutions Regulations, 1998. Teachers in a medical college/institution having a total of eight years teaching experience out of which at least five years teaching experience as Lecturer or Assistant Professor gained after obtaining post graduate degree shall be recognised as post graduate teachers.

9.10 Co Guide: A Co-guide may be included provided the work requires substantial contribution from a sister department or from another medical institution recognised for teaching/training by JSS University / Medical Council of India. The co-guide shall be a recognised post graduate teacher of JSS University.

9.11 Change of guide: In the event of a registered guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the university.

10. Schedule of Examination

The examination for MD / MS courses shall be held at the end of three academic years (six academic terms). The examination for DM and M Ch courses shall be held at the end of three years. The examination for the diploma courses shall be held at the end of two academic years (four academic terms). For students who have already passed Post Graduate Diploma and appearing for MD examination, the examination shall be conducted after two academic years (four academic terms, including submission of dissertation) The University shall conduct two examinations in a year at an interval of four to six months between the two examinations. Not more than two examinations shall be conducted in an academic year.

11. Scheme of Examination

11.1 MD / MS Degree

MD / MS Degree examinations in any subject shall consist of dissertation, written paper (Theory), Practical/Clinical and Viva voce.

11.1.1 **Dissertation:** Every candidate shall carryout work and submit a dissertation as indicated in SI NO 9. Acceptance of dissertation shall be a precondition for the candidate to appear for the final examination.

11.1.2 **Written Examination (Theory):** A written examination shall consist of four question papers, each of three hours duration. Each paper shall carry 100 marks. Out of the four papers, the 1st paper in clinical subjects will be on applied aspects of basic medical sciences. Recent advances may be asked in any or all the papers. In basic medical subjects and para-clinical subjects, questions on applied clinical aspects should also be asked.

11.1.3 **Practical / Clinical Examination:** In case of practical examination, it should be aimed at assessing competence and skills of techniques and procedures as well as testing student's ability to make relevant and valid observations, interpretations and inference of laboratory or experimental work relating 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.

The total marks for Practical / clinical examination shall be 200.

11.1.4 **Viva Voce.** 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:

- i) For examination of all components of syllabus 80 Marks
 - ii) For Pedagogy 20 Marks
- If there is skills evaluation, 10 marks shall be reserved for Pedagogy and 10 marks for skill evaluation.

11.1.5 **Examiners.** There shall be at least four examiners in each subject. Out of them, two shall be external examiners and two shall be internal examiners. The qualification and teaching experience for appointment as an examiner shall be as laid down by the Medical Council of India.

11.1.6 **Criteria for declaring as pass in University 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.

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 Registrar (Evaluation).

11.1.7 **Declaration of class:** A successful candidate passing the University examination in first attempt and secures grand total aggregate 75% of marks or more will be declared to have passed the examination with distinction, 65% but below 75% declared as First Class and 50% but below 65% declared as Second Class.

A candidate passing the University examination in more than one attempt shall be declared as Pass Class irrespective of the percentage of marks.

11.2 DM/M Ch

The examination shall consist of theory, clinical/practical and viva voce examination.

11.2.1 **Theory (Written Examination):** The theory examination shall consist of four question papers, each of three hours duration. Each paper shall carry 100 marks. Out of the four papers, the first paper will be on basic medical sciences. Recent advances may be asked in IV Paper.

11.2.2 **Practical / Clinical Examination:** In case of practical examination it should be aimed at assessing competence, skills of techniques and procedures as well as testing student's ability to make relevant and valid observations, interpretations and 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.

The maximum marks for Practical / Clinical shall be 200.

11.2.3 **Viva-Voce:** Viva Voce examination shall aim at assessing thoroughly, depth of knowledge, logical reasoning, confidence and oral communication skills. The maximum marks shall be 100. This also includes spotters like instruments, anaesthesia machines, drugs, ECG, X – ray.

11.2.4 **Examiners:** There shall be at least four examiners in each subject. Out of them, two shall be external examiners and two shall be internal examiners. The qualification and teaching experience for appointment as an examiner shall be as laid down by the Medical Council of India.

11.2.5 **Criteria for declaring as pass in University 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.

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 Registrar (Evaluation).

11.3 Diploma Examination:

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

11.3.1 **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. In basic medical subjects and Para- clinical subjects, questions on applied clinical aspects should also be asked.

11.3.2 **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.

The maximum marks for Practical / Clinical shall be 150.

11.3.3 **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 50. This also includes spotters like instruments, anesthesia machines, drugs, ECG, X-ray.

11.3.4 Criteria for declaring as pass in University 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.

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 Registrar (Evaluation).

11.3.5 **11.3.5 Declaration of distinction.** A successful candidate passing the University 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.

11.3.6 **Examiners.** There shall be at least four examiners in each subject. Out of them, two shall be external examiners and two shall be internal examiners. The qualification and teaching experience for appointment as an examiner shall be as laid down by the Medical Council of India.

12. Number of Candidates per day

The maximum number of candidates for practical / clinical and viva-voce examination shall be as under:

MD /MS Course: Maximum of 6 per day.

Diploma Course: Maximum of 8 per day.

CHAPTER II

GOALS AND GENERAL OBJECTIVES OF POSTGRADUATE MEDICAL EDUCATION PROGRAM

GOAL

The goal of postgraduate medical education shall be to produce competent specialists and/or medical teachers:

1. Who shall recognize the health needs of the community and carry out professional obligations ethically and in keeping with the objectives of the national health policy.
2. 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.
3. Who shall be aware of the contemporary advance and developments in the discipline concerned.
4. Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology and
5. Who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

GENERAL OBJECTIVES

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

1. Recognize the importance to the concerned speciality in the context of the health needs of the community and the national priorities in the health section.
2. Practice the speciality concerned ethically and in step with the principles of primary health care.
3. Demonstrate sufficient understanding of the basic sciences relevant to the concerned speciality.
4. 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 primitive measure/strategies.
5. Diagnose and manage majority of the conditions in the speciality concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.

6. Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability related to the speciality.
7. Demonstrate skills in documentation of individual case details as well as morbidity and mortality rate relevant to the assigned situation.
8. Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behaviour in accordance with the societal norms and expectations.
9. Play the assigned role in the implementation of national health programme, effectively and responsibly.
10. Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.
11. Develop skills as a self-directed learner, recognize continuing education needs; select and use appropriate learning resources.
12. Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyze relevant published research literature.
13. Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.
14. 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 direct the efforts towards the attainment of these competencies.

COMPONENTS OF THE POSTGRADUATE CURRICULUM:

The major components of the Postgraduate curriculum shall be:

- Theoretical knowledge
- Practical and clinical skills
- Thesis skills.
- Attitudes including communication skills.
- Training in research methodology.

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

CHAPTER III
POSTGRADUATE COURSES IN ANESTHESIOLOGY
M D ANAESTHESIOLOGY

Goals:

The goals of three year degree course in anaesthesiology (two years for post diploma in anaesthesia) would be to train a MBBS doctor who after the satisfactory completion of which shall:

1. Practice independently the art and science of anaesthesiology and resuscitation effectively and ethically, backed by scientific knowledge and skill base.
2. Undertake responsibilities in critical care unit, trauma unit, and respiratory therapy unit of unconscious patients requiring ventilatory support.
3. Undertake acute and chronic pain management.
4. Continue to evince keen interest in continuous professional development irrespective of whether he is in a teaching institution or in private anaesthetic practice.
5. Be a dedicated, motivated teacher who is always keen to train or to share his knowledge and skills with a colleague or junior or any learner.

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 time of completion of the course. The objectives may be considered under the following headings.

1. Knowledge (cognitive domain).
2. Skills (psychomotor domain).
3. Attitudes communication skills, human values and ethical practice.

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

1. Knowledge:

- a. Demonstrate understanding of basic sciences relevant to anaesthesia.
- b. 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.
- c. Describe the underlying theoretical background of mechanism of pain perception and pain management.
- d. Describe the theory of the underlying aetiology, mechanism and management of the conditions requiring resuscitation.
- e. Demonstrate, understanding of the theoretical base of polytrauma and the science of resuscitation.
- f. Recognise the conditions that may be outside the area of his competence and refer them to an appropriate specialist prior to anaesthetising them.

- g. Advice regarding the anaesthetic management of any surgical case and to carry out this management effectively.
- h. Update himself / herself by self-study and by attending courses, conferences and seminars relevant to anaesthesia.
- i. Teach and guide his team colleagues and students.
- j. Demonstrate understanding of medicolegal aspects of anaesthesia.
- k. Demonstrate basic knowledge of the administrative aspects of operating room complex.
- l. Undertake audit, use information technology tools and carryout research, both basic and clinical, with the aim of publishing the work and presenting the same at various scientific fora.

2. Skills:

- a. 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.
- b. Administer anaesthesia (general and or regional) to common surgical operations independently and to superspecialities like cardiac surgery, neurosurgery etc. with the help of a senior anaesthesiologist.
- c. Provide basic life support (BLS) and advanced cardiac life support (ACLS).
- d. Manage airway and perform ventilatory care etc., of unconscious and polytrauma cases as a member of trauma team and critical care unit team.
- e. Undertake complete patient monitoring including preoperative, intra-operative and postoperative ventilatory care of the patients.
- f. Perform acute and chronic pain management.

3. Attitudes and Communication Abilities:

- a. 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.
- b. Develop communication skills, in particular the skill to explain the various options available in the anaesthetic management, critical care, pain management and to obtain a true informed consent from the patient.
- c. Provide leadership in the operating room environment and get best out of the team in a congenial working atmosphere.
- d. Apply high moral and ethical standards while carrying out human or animal research.
- e. Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- f. 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 with the current content of the scientific journals and reviews of major topics, in anaesthesia.

- A. History of anaesthesiology
- B. Basic sciences related to anaesthesia including anatomy, physiology, pharmacology, biochemistry, patho physiology, immunology and genetics.
- C. Medicine applied to anaesthesiology.
- D. Physics related to anaesthesiology, electronics, computers and lasers, in anaesthesiology. Internet/Medline and its uses and applications
- E. Anaesthesiology.
 - a. Pre anaesthetic evaluation and preparation.
 - b. Principles and practice of anaesthesiology including pre, per and post operative care, of patients belonging to general surgery and other subspecialities like cardiothoracic surgery, neurosurgery, orthopaedics, plastic surgery and surgical endocrinology, surgical oncology, paediatric, obstetrics and gynaecology, ENT, ophthalmology, urology, dental surgery, laproscopic surgery etc.
 - c. Blood transfusion fluid and electrolyte balance, acid base balance.
 - d. Fires and explosion in operation theatre.
 - e. Operation theatre sterilization procedures.
- F. Pain clinic organisation and management, pain pathway, and management of pain.
- G. Respiratory therapy and management of both acute and chronic respiratory insufficiencies and ventilator commitments in, ICU
- H. Critical care anaesthesiology and trauma care unit management.
 - a. Different methods of anaesthetic techniques.
 - b. Regional anaesthesia including spinal, epidural and caudal etc.
 - c. Local anaesthesia including nerve blocks.
 - d. Anaesthesia in abnormal environments like high attitude anaesthesia etc
 - e. Complication in anaesthesiology and their management both pre and post operatively.
 - f. Anaesthesia for day care surgery.
 - g. Anaesthesia for diagnostic procedure like endoscopy CT Scan MRI etc
- I. Informed consent/medicolegal issues: understanding the implications of acts of omission and commission in practice. Issues regarding consumer protection implications in medicolegal cases.
- J. Communication skills with colleagues teachers, patients, and patients relatives.

- K. Principles of anaesthesia audit, understanding the audit process and outcome; methods adopted for the same.
- L. Essentials of Research methodology:
 - a. Basics of biostatistics and its application.
 - b. Ability to undertake clinical and basic research.
 - c. Ability to publish results of one's work.
- M. Principles of evidence based medicine and its application in anaesthetic practice.
- N. Medical ethics/social responsibilities of the anaesthesiologists.
- O. Record keeping: Ability to keep records as scientifically as possible; knowledge of computers is beneficial.

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. NA - Not Applicable

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. Miscellaneous
 - a. Disaster management camps
 - b. Mass casualties
 - c. Safety in Anaesthesia and occupational hazards
 - d. Planning of operation theatres
 - e. Selection and purchase of equipments

a. Basic Graduate Skills:

The student should have acquired certain skills during his undergraduation and internship. These skills have to be reinforced at the beginning of the training period. These include:

Procedure	Category	Year	No
Insertion of I.V. lines	PI	I	100
Insertion of Nasogastric Tubes	PI	I	100
Recording of Vital Signs.	PI	I	100

b. Anaesthesia Procedures:

Orotracheal intubation	PI	I/II/III	100
Nasotracheal Intubation	PI	I/II/III	50
Supraglottic airway devices	PI	I/II/III	50

Procedure	Category	Year	No
Airway (oral/nasal) insertion	PI	I/II/III	100
Subarachnoid block	PI	I/II/III	100
Epidural block (including caudal)	PI	I/II/III	10
Brachial plexus block	PI	I/II/III	5
Intravenous regional analgesia	PI	II/III	5
Three in one block	PI	II/III	2
Rectus sheath block	PI	II/III	2
Hernia block	PI	II/III	2
Other nerve blocks	PI	II/III	NA
Major anaesthesia procedures	PA/PI	II/III*	100
		per year	
Minor anaesthesia procedures	PA/PI	II/III*	200
		per year	
		*Per year	

c. Critical Care Procedures:

Insertion of arterial lines	PI	II/III	5
Insertion of central venous lines	PI	II/III	5
Intercostal drainage	O	II/III	NA
Tracheostomy	O	III	NA
Ventilatory management of patients	PI	II/III	NA
Sampling for & interpretation of ABG	PI	II/III	NA
Correction of electrolyte imbalance	PI	II/III	NA
Fiberoptic bronchoscopy	PA	III	NA
Minitracheostomy	PA	III	NA
Insertion of SWG catheter	O	III	NA

a. Emergency Room Procedures:

Cardiopulmonary resuscitation (BLS & ACLS)	PI	I/II/III	NA
Management of cardiac failure	PI	II/III	2
Management of respiratory failure	PI	II/III	2
Management of shock	PI	II/III	2
Management of airway obstruction	PI	I/II/III	5

b. Pain Alleviation Procedures:

Stellate ganglion block	PA	III	
Coeliac ganglion block	PA	III	
Trigeminal nerve block	PA	III	
Labour analgesia	PI	II/III	
Post operative pain management	PI	II/III	
Neurolysis, & other nerve ablation procedures	PA	III	
TENS	PI	II/III	

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.

- 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 specialities. Few topics are suggested as examples:
 - i. Bio-statistics.
 - ii. Use of library
 - iii. Research Methods
 - iv. Medical code of Conduct and Medical Ethics.
 - v. National health and Disease Control Programs.
 - vi. Communication Skills etc.
 - vii. Initial introductory lectures about the subject.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. jaundice, diabetes mellitus, thyroid etc.
- 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 relevant details in the logbook. Further, every candidate must make a presentation from the allotted journal(s) of selected articles at least four times a year and a total of 12 presentations in three years. The presentations would be evaluated using checklists and would carry weightage for internal assessment (See checklist in chapter IV). A time table with names of the students and the moderator should be announced at the beginning of every year.
- 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 relevant details in the logbook. Further, every candidate must present on selected topics, at least four times a year and a total of 12 seminar presentations in three years. The presentations would be evaluated using checklists and would carry weightage for internal assessment (See checklist in chapter IV). A timetable for the subject, with names of the student and the moderator should be scheduled at the beginning of every year.

- 4. Student Symposium:** Recommended as an optional multidisciplinary 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 preanaesthetic evaluation of the patients posted for operation.
 - ii) And to do the postanaesthetic follow up of operated patients for alleviation of post-operative pain, fluid management and for diagnosis and management of any of the post-operative sequelae.
 - b) Teaching Rounds: Every unit should have grand rounds for teaching clinical methods and preanaesthetic 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. Teaching Skills:** Postgraduate students must teach undergraduate students (e.g. medical, nursing) by taking demonstrations, bed side clinics, tutorials, lectures etc. Assessment is made using a checklist by faculty. Record of their participation should be kept in logbook. Training of postgraduate students in educational technology is recommended.
- 8. Continuing Medical Education Programmes (CME):** At least 2 state / national level CME programmes should be attended by each student in 3 years.
- 9. Conferences:** Attending conferences is optional. However participation & presentation of scientific paper should be encouraged.

Dissertation:

Every candidate pursuing MD degree course in anaesthesiology is required to carry out work on a selected research project under the guidance of a recognised postgraduate teacher. The results of such a work shall be submitted in the form of a dissertation.

- a. The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions.
- b. Every candidate shall submit to University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within six months from the date of commencement of the course on or before the dates notified by the University. The synopsis shall be sent through the proper channel.
- c. Such synopsis will be reviewed and the dissertation topic will be registered

by the University. No changes in the dissertation topic or guide shall be made without prior approval of the University.

- d. The dissertation should be written under the following headings:
 - i. Introduction
 - ii. Aims and objectives of study
 - iii. Review of literature
 - iv. Material and methods
 - v. Results
 - vi. Discussion
 - vii. Conclusion
 - viii. Summary
 - ix. References
 - x. Tables
 - xi. Annexure
- e. The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other Checklists. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the institution.
- f. Four copies of dissertation thus prepared shall be submitted to the University, six months before final examination, on or before the dates notified by the University.
- g. The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is an essential precondition for a candidate to appear in the University examination.
- h. **Guide:** The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work shall be as per Medical Council of India, Minimum qualifications for Teachers in Medical Institutions regulations, 1998. Teachers in a medical college/institution having a total of eight years teaching experience out of which at least five years teaching experience as lecturer **or** Assistant Professor, gained after obtaining postgraduate degree, shall be recognised as postgraduate teachers.
A co-guide may be included, provided the work requires substantial contribution from a sister department or from another medical institution recognised for teaching/training by the University / Medical Council of India. The co-guide shall be a recognised postgraduate teacher.
- i. **Change of guide:** In the event of a registered guide leaving the college for any reason or in the event of death of the guide, guide may be changed with prior permission from the University.
- j. For some more details regarding guide etc please see Chapter I and for books on research methodology, ethics, etc see Chapter IV.

Rotation and Posting in other departments

The listed knowledge and skills are to be learnt over a period of 3 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 8 months and the remaining 2 years and 4 months in the parent department.

Basic Sciences: Rotation in other departments like, Anatomy, to be done as concurrent studies during the first year of training. At least two hours may be spent in the first six months of the course. Basic science relevant to anaesthesia can be studied in the respective departments in the afternoons.

Anatomy: Special emphasis for the dissection of larynx, trachea, heart, various nerves & plexuses.

Allied Speciality: Students should be posted in ICU, ICCU, SICU (Trauma unit) and pain clinic during second year of training for 2 weeks in each, for a total duration of 2 months.

Other Subspecialties of Anaesthesia:

Postings to other subspeciality departments will be, during second year and the duration of postings is as shown below:

Cardiothoracic surgery	4 weeks
Neuro surgery	4 weeks
Paediatric surgery	4 weeks
Cancer surgery	2 weeks
Oromaxillofacial surgery	2 weeks
Plastic surgery	2 weeks
Urology	2 weeks
Laparoscopic and endoscopic surgery	2 weeks
Anaesthesia for investigative procedures like CT scan, lithotripsy, cardiac cath lab	2 weeks
	<hr/>
	24 weeks

Yearwise Structured Training Schedule

First Year:

1. Basic Sciences related to anaesthesiology: theoretical knowledge, frequent visits to anatomy dissection halls & museum, to revise the relevant subjects.
2. Theoretical knowledge of anaesthesiology & resuscitation: special emphasis on clinical examination of patients, learning clinical methods, arriving at correct diagnosis.
3. Basic knowledge about
 - a. Computers in anaesthesia, Medline, Internet.
 - b. Bio statistics.

- c. Medical audit.
 - d. Medicolegal aspects.
 - e. Research methodology.
 - f. Evidence based medicine.
 - g. Medical ethics, and social responsibilities of anesthesiologists.
4. Learning of communication skills.
 5. Anaesthesia Skills
 - a. Preanaesthetic evaluation / under supervision.
 - b. Monitoring of patients throughout perioperative period.
 - c. Assisting, setting up of anaesthesia machine, monitors and ventilator.
 - d. Assisting the conduct of anaesthesia for major surgeries; knowledge about the complications of anaesthesia.
 - e. Assisting for short anaesthesia initially and later on doing independently under supervision
 - f. Conduct of anaesthesia OPD.
 - g. CPR training and mastering of BLS & ACLS.
 6. Dissertation: Choosing a topic of dissertation, submission of synopsis to the university, collection of literature, conduct of pilot studies.

Second Year:

1. Theoretical knowledge of allied subjects, subspecialities of anaesthesia. Assisting senior anaesthesiologists in specialised branches like paediatric surgery, cardiothoracic surgery, critical care trauma etc.
2. Anaesthetic Skills: At the end of second year the student should be capable of;
 - a. Anaesthetising patients without assistance but under supervision.
 - b. Identifying the complications of anaesthesia and manage them independently but under supervision.
 - c. Setting up of anaesthesia machines, monitors and ventilator independently.
3. Conference & Workshops: Attending one state level and one national level conference/CME and presentation of a scientific paper.
4. Dissertation: Carrying out of the dissertation study work, periodic reviews, interaction with guide. Organisation of the data, writing up of the manuscript of dissertation at the end of second year.
5. The student should be actively involved in presentation of seminars, journal clubs, case presentation/discussions.

Third Year:

1. The student should be well versed with basics, allied subjects and recent advances in the respective fields.
2. Anaesthesia Skills: At the end of the third year the candidate should be able to make independent decisions as regards anaesthesia, pain management and post operative care of all kinds of patients.
3. Teaching Activities: Final year student should take a lead in conducting

seminars, journal clubs, case discussions, panel discussions with I & II year students. The third year students should also involve in teaching undergraduate students especially bedside clinics.

4. Dissertation: The completed dissertation must be submitted to the University, 6 months before the examination, before the notified date.
5. The student must get expertise in the specialised procedures as noted in the course content table.

Monitoring Learning Progress

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring shall be 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. Checklists are given in Chapter IV.

The learning out comes to be assessed should include:

1. Personal attitudes
2. Acquisition of knowledge
3. Clinical and operative skills
4. Teaching skills
5. Dissertation

1. Personal Attitudes: The essential items are:

- a. Caring attitude
- b. Initiative
- c. Organizational ability
- d. Potential to cope with stressful situations and undertake responsibility
- e. Trust worthiness and reliability
- f. To understand and communicate intelligibly with patients and others
- g. To behave in a manner which establishes professional relationships with patients and colleagues
- h. Ability to work in a team.
- i. 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.

2. 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.

- a. **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, Chapter IV)
- b. **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)
- c. **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 presentation(s) are to be assessed using a checklist similar to that used for seminar.
- d. **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.

3. Clinical Skills:

- a. **Day to Day work:** Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidate's sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Chapter IV)
- b. **Clinical Meeting:** 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)
- c. **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)

4. **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, Chapter IV)

- 5. Dissertation in the Department:** Periodic presentations are to be made in the department. Initially the topic selected is to be presented before submission to the University for registration, again before finalization for critical evaluation and another before final submission of the completed work (see Model Checklist IV & VII, Chapter IV)
- 6. Periodic tests:** The department may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practical / clinical and viva voce.
- 7. Work diary / Look 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.
- 8. 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 counseled by the guide and head of the department. In extreme cases of default the departmental committee may recommended 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 four 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 to be asked in paper IV. Distribution

of topics for each paper will be as follows:

Paper I: Basic Science as applicable to anaesthesia.

- a. Anatomy.
- b. Physiology.
- c. Pharmacology.
- d. Physics.
- e. Biochemistry.
- f. Pathology.
- g. History.
- h. Equipments.

Paper II: Clinical Practice of anaesthesia.

- a. Cardio vascular system.
- b. Respiratory system.
- c. Neuro surgery.
- d. Obstetrics and gyanecology
- e. Orthopaedics.
- f. Ophthalmology.

Paper III: Clinical Practice of anaesthesia.

- a. Paediatrics.
- b. Renal and hepatic system.
- c. Endorcrines.
- d. Haemopoitics.
- e. Geriatrics
- f. ENT
- g. Outpatient anaesthesia and dental anaesthesia.
- h. Nerve blocks.

Paper IV:

- a. Applied medicine in relation to anaesthesia.
- b. Theoretical aspects of pain and pain relief including postoperative & cancer pain.
- c. ICU, critical care and recent advances

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 & present 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:

- a. For examination of all components of syllabus **80 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 the candidate may also be given, instruments/equipments, X-ray images, ABG reports, ECG strips, drugs ultrasound/echocardiography reports & specimens. It includes discussion on dissertation also.

- a. For teaching skills (Pedagogy)..... **20 marks**

A topic to be given to each candidate in the beginning of clinical examination. He / She is asked to make presentation on the topic for 8 to 10 minutes.

Maximum marks for	Theory	Practical	Viva	Grand Total
M D Anaesthesiology	400	200	100	700

Recommended Books and Journals

Books:

1. Practice of Anaesthesiology - Wylie - Churchill - Davidson.
2. General Anesthesia – Prys Roberts
3. Anaesthesia - Two volumes, Ronald D, Miller.
4. Anatomy for Anaesthetist - Harold Eillis
5. Understanding Anaesthetic Equipments - Dorsch & Dorsch.
6. Emergency Anaesthesia - Thronton
7. Principles of Obstetric - Anaesthesia - J. S. Crawford.
8. Physics for Anaesthetist - Muschnin & Macintosh.
9. Neurosurgical Anaesthesia - Hunter
10. Paediatric Anaesthesia - Gregory.
11. Cardiac Anaesthesiology - 2 volumes - Jonathan Benumaf.
12. Anaesthesia and co existing diseases - Stoelting.
13. Anaesthesia Equipment - Ehrenwerth and James. B. Eiscnkraft
14. Text Book of Anaesthesia - A. R. Aitken Head & G. Smith
15. Anaesthesia for infants and children - Smith
16. Obstetrics Anaesthesia - Bonica
17. Regional Anaesthesia - Macintosh series
18. Epidural Analgesia - Bromage
19. Medical problems of Anaesthesia - Kaulman
20. Principles of Anaesthesiology - Collins
21. Anaesthesia for Orthopedic Surgery - Zauder and others
22. Neural Blockade - Cousins
23. Cardiac Anaesthesia – Kaplan
24. Thoracic Anaesthesia - Kaplan and Muschin
25. Regional Anaesthesia - Labot
26. Drugs Interactions & other basic Medical science - Anaesthesia speciality books.

Journals

1. Anesthesia and Analgesia
2. Anaesthesiology
3. Anaesthesia I
4. Acta Anaesthesia Scandinavica
5. Canadian Journal of Anaesthesia
6. Indian Journal of Anaesthesiology
7. British Journal of Anaesthesia
8. Expert Anaesthesia
9. Recent advances in Anaesthesiology
10. Year Book of Anaesthesia
11. Anesthesia Clinics
12. Clinics in North America in Anaesthesiology

DIPLOMA IN ANAESTHESIOLOGY (DA)

Goals:

The goals of two year diploma course in anaesthesiology would be to train a MBBS doctor who after the satisfactory completion of which shall:

1. Practice independently the art and science of anaesthesiology and resuscitation effectively and ethically, backed by scientific knowledge and skill base.
2. Undertake responsibilities in critical care unit, trauma unit, and respiratory therapy unit of unconscious patients requiring ventilatory support.
3. Undertake acute and chronic pain management.
4. Continue to evince keen interest in continuous professional development irrespective of whether he is in a teaching institution or in private anaesthetic practice.

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 time of completion of the course. The objectives may be considered under the following headings.

1. Knowledge (cognitive domain).
2. Skills (psychomotor domain).
3. Attitudes communication skills, human values and ethical practice.

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

1. Knowledge:

- a. Demonstrate understanding of basic sciences relevant to anaesthesia.
- b. 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.
- c. Describe the underlying theoretical background of mechanism of pain perception and pain management.
- d. Describe the theory of the underlying aetiology, mechanism and management of the conditions requiring resuscitation.
- e. Understanding of the theoretical base of polytrauma and the science of resuscitation.
- f. Recognise the conditions that may be outside the area of his competence and refer them to an appropriate specialist prior to anaesthetising them.
- g. Advice regarding the anaesthetic management of any surgical case and to carry out this management effectively.
- h. Update himself / herself by self-study and by attending courses, conferences and seminars relevant to anaesthesia.
- i. Understanding of medicolegal aspects of anaesthesia.

2. Skills:

- a. 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.
- b. Administer anaesthesia (general and or regional) to common surgical operations independently and to superspecialities like cardiac surgery, neurosurgery etc. with the help of a senior anaesthesiologist.
- c. Provide basic life support (BLS) and advanced cardiac life support (ACLS).
- d. Manage airway and perform ventilatory care etc., of unconscious and polytrauma cases as a member of trauma team and critical care unit team.
- e. Undertake complete patient monitoring including preoperative, intra-operative and postoperative ventilatory care of the patients.
- f. Perform acute and chronic pain management.

3. Attitudes and Communication Abilities:

- a. 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.
- b. Develop communication skills, in particular the skill to explain the various options available in the anaesthetic management, critical care, pain management and to obtain a true informed consent from the patient.
- c. Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- d. 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 with the current content of the scientific journals and reviews of major topics, in anaesthesia.

1. History of anaesthesiology.
2. Basic sciences related to anaesthesia including anatomy, physiology, pharmacology, biochemistry, patho physiology, immunology and genetics.
3. Medicine applied to anaesthesiology.

4. Physics related to anaesthesiology, electronics, computers and lasers, in anaesthesiology. Internet/Medline and its uses and applications
5. Anaesthesiology.
 - a. Pre anaesthetic evaluation and preparation.
 - b. Principles and practice of anaesthesiology including pre, per and post operative care, of patients belonging to general surgery and other subspecialities like cardiothoracic surgery, neurosurgery, orthopaedics, plastic surgery and surgical endocrinology, surgical oncology, paediatric, obstetrics and gynaecology, ent, ophthalmology, urology, dental surgery, laproscopic surgery etc.
 - c. Blood transfusion fluid and electrolyte balance, acid base balance.
 - d. Fires and explosion in operation theatre.
 - e. Operation theatre sterilization procedures.
6. Pain clinic organisation and management, pain pathway and management of pain.
7. Respiratory therapy and management of both acute and chronic respiratory insufficiencies and ventilator commitments in, I.C.U.
8. Critical care anaesthesiology and trauma care unit management.
 - a. Different methods of anaesthetic techniques.
 - b. Regional anaesthesia including spinal, epidural and caudal etc.
 - c. Local anaesthesia including nerve blocks.
 - d. Anaesthesia in abnormal environments like high attitude anaesthesia etc.
 - e. Complication in anaesthesiology and their management both pre and post operatively.
 - f. Anaesthesia for day care surgery.
 - g. Anaesthesia for diagnostic procedure like endoscopy CT Scan MRI etc.
9. Informed consent/medicolegal issues: understanding the implications of acts of omission and commission in practice. Issues regarding consumer protection implications in medicolegal cases.
10. Communication skills with colleagues teachers, patients, and patients 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 anaesthesiologists.
14. Record keeping: Ability to keep records as scientifically as possible; knowledge of computers is beneficial.

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. NA - Not Applicable

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. Miscellaneous
 - a. Disaster management camps
 - b. Mass casualties
 - c. Safety in Anaesthesia and occupational hazards
 - d. Planning of operation theatres
 - e. Selection and purchase of equipments

a. Basic Graduate Skills:

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

Procedure	Category	Year	No
Insertion of IV lines	PI	I	75
Insertion of nasogastric tubes	PI	I	75
Recording of vital signs.	PI	I	75

b. Anaesthesia Procedures:

Orotracheal intubation	PI	I/II	75
Nasotracheal Intubation	PI	I/II	25
Supraglottic airway devices	PI	I/II	25
Airway (oral/nasal) insertion	PI	I/II	75
Subarachnoid block	PI	I/II	75
Epidural block (including caudal)	PI	I/II	5
Brachial plexus block	PI	II	2
Intravenous regional analgesia	PI	II	2
Three in one block	PI	II	2
Rectus sheath block	PI	II	2
Hernia block	PI	II	2
Other nerve blocks	PI	II	10
Major anaesthesia procedures	PA/PI	II* per year	100
Minor anaesthesia procedures	PA/PI	II* per year	200

*Per year

c. Critical Care Procedures:

Procedure	Category	Year	No
Insertion of arterial lines	PI	II	2
Insertion of central venous lines	PI	II	2
Intercostal drainage	O	II	NA
Tracheostomy	O	II	NA
Ventilatory management of patients	PI	II	NA
Sampling for & interpretation of ABG	PI	II	NA
Correction of electrolyte imbalance	PI	II	NA
Fiberoptic bronchoscopy	O	II	NA
Minitracheostomy	O	II	NA
Insertion of SWG catheter	O	II	NA

c. Emergency Room Procedures:

Cardiopulmonary resuscitation (BLS & ACLS)	PI	I/II	NA
Management of cardiac failure	PI	II	2
Management of respiratory failure	PI	II	2
Management of shock	PI	II	2
Management of airway obstruction	PI	I/II	5

d. Pain Alleviation Procedures:

Stellate ganglion block	PA	II	2
Coeliac ganglion block	PA	II	2
Trigeminal nerve block	PA	II	2
Labour analgesia	PI	II	
Post operative pain management	PI	II	100
Neurolysis & other nerve ablation procedures	PA	II	2
TENS	PI	II	2

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.

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These topics may preferably taken up in the first few weeks of the 1st year.
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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. Continuing Medical Education Programmes (CME): At least 2 state / national level CME programmes should be attended by each student in 2 years.

8. Conferences: Attending conferences is optional. However participation & 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 subspecialities will be 8 months and the remaining 1 year and 4 months in the parent department.

Basic Sciences: Rotation in other departments like, Anatomy, to be done as concurrent studies during the first year of training. At least two hours may be spent in the first six months of the course. Basic science relevant to anaesthesia can be studied in the respective departments in the afternoons.

Anatomy: Special emphasis for the dissection of larynx, trachea, heart, various nerves & plexuses.

Allied Speciality: Students should be posted in ICU, ICCU, SICU (Trauma unit) and pain clinic during second year of training for 2 weeks in each, for a total duration of 2 months.

Other Subspecialities of Anaesthesia:

Postings to other subspeciality departments will be, during second year and the duration of postings is as shown below:

Cardiothoracic surgery	3 weeks
Neuro surgery	3 weeks
Paediatric surgery	3 weeks
Cancer surgery	2 weeks
Oromaxillofacial surgery	2 weeks
Plastic surgery	2 weeks
Urology	2 weeks
Laposcopic and endoscopic surgery	2 weeks
Anaesthesia for investigative procedures like CT scan, lithotripsy, cardiac cath lab	1 week

Yearwise Structured Training Schedule

First Year:

1. Basic Sciences related to anaesthesiology: theoretical knowledge, frequent visits to anatomy dissection halls & museum, to revise the relevant subjects.
2. Theoretical knowledge of anaesthesiology & resuscitation: special emphasis on clinical examination of patients, learning clinical methods, arriving at correct diagnosis.
3. Basic knowledge about
 - a. Computers in anaesthesia, Medline, Internet.
 - b. Bio statistics.
 - c. Medical audit.
 - d. Medicolegal aspects.
 - e. Evidence based medicine.
 - f. Medical ethics and social responsibilities of anesthesiologists.
4. Learning of communication skills.
5. Anaesthesia Skills
 - a. Preanaesthetic evaluation / under supervision.
 - b. Monitoring of patients throughout perioperative period.
 - c. Assisting, setting up of anaesthesia machine, monitors and ventilator.
 - d. Assisting the conduct of anaesthesia for major surgeries; knowledge about the complications of anaesthesia.
 - e. Assisting for short anaesthesia initially and later on doing independently under supervision
 - f. Conduct of anaesthesia OPD.
 - g. CPR training and mastering of BLS & ACLS.

Second Year:

1. Theoretical knowledge of allied subjects, subspecialties of anaesthesia. Assisting senior anaesthesiologists in specialised branches like paediatric surgery, cardiothoracic surgery, critical care trauma etc.
2. Anaesthetic Skills: At the end of second year the student should be capable of;
 - a. Anaesthetising patients without assistance but under supervision.
 - b. Identifying the complications of anaesthesia and manage them independently but under supervision.
 - c. Setting up of anaesthesia machines, monitors and ventilator independently.
3. Conference & Workshops: Attending one state level and one national level conference/CME and presentation of 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.
6. Anaesthesia Skills: At the end of the second year the candidate should be able to make independent decisions as regards anaesthesia, pain management and post operative care of all kinds of patients.
7. The student must get expertise in the specialised procedures as noted in the course content table.

Monitoring Learning Progress

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring shall be 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. Checklists are given in Chapter IV.

The learning outcomes to be assessed should include:

1. Personal attitudes
2. Acquisition of knowledge
3. Clinical and operative skills

1. **Personal Attitudes:** The essential items are:

- a. Caring attitude
- b. Initiative
- c. Organizational ability
- d. Potential to cope with stressful situations and undertake responsibility.
- e. Trust worthiness and reliability.
- f. To understand and communicate intelligibly with patients and others.
- g. To behave in a manner which establishes professional relationships with patients and colleagues.
- h. Ability to work in a team.
- i. 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.

2. **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.

- a. **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, Chapter IV)
- b. **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)
- c. **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 presentation(s) are to be assessed using a checklist similar to that used for seminar.

3. Clinical Skills:

- a. **Day to Day work:** Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidate's sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Chapter IV)
 - b. **Clinical Meeting:** 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)
 - c. **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)
4. **Periodic tests:** The department may conduct two tests, one 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, practical / clinical and viva voce.
 5. **Work diary / Look 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.
 6. **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 counseled by the guide and head of the department. In extreme cases of default the departmental committee may recommended 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 to 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.

- a. Anatomy.
- b. Physiology.
- c. Pharmacology.
- d. Physics.
- e. Biochemistry.
- f. History of anaesthesia.

Paper II: Clinical Practice of anaesthesia.

- a. Cardio vascular system.
- b. Respiratory system.
- c. Neuro surgery.
- d. Paediatrics.
- e. Obstetrics and gyanecology
- f. Orthopaedics.
- g. Renal and hepatic system
- h. Ophthalmology.

Paper III: Clinical Practice of anaesthesia.

- a. ENT
- b. Endocrines.
- c. Geriatrics
- d. Outpatient anaesthesia and dental anaesthesia
- e. Critical care

B. Clinical Examination: 150 marks

It should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine & present one long case (carrying 80 marks) and two short cases (each carrying 35 marks). The total marks for clinical examination shall be 150.

C. Viva-Voce: 50 marks

Viva-Voce examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. The total marks shall be 50 and the distribution of marks shall be as under:

- a. For examination of all components of syllabus **50 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 the candidate may also be given, instruments/equipments, X-ray images, ABG reports, ECG strips, drugs ultrasound/echocardiography reports & specimens.

Maximum marks for	Theory	Practical	Viva	Grand Total
Diploma in Anaesthesiology	300	150	50	500

Recommended Books and Journals

Books:

1. Practice of Anaesthesiology - Wylie - Churchill - Davidson.
2. General Anesthesia – Prys Roberts
3. Anaesthesia - Two volumes, Ronald D, Miller.
4. Anatomy for Anaesthetist - Harold Eillis
5. Understanding Anaesthetic Equipments - Dorsch & Dorsch.
6. Emergency Anaesthesia - Thronton
7. Principles of Obstetric - Anaesthesia - J. S. Crawford.
8. Physics for Anaesthetist - Muschnin & Macintosh.
9. Neurosurgical Anaesthesia - Hunter
10. Paediatric Anaesthesia - Gregory.
11. Cardiac Anaesthesiology - 2 volumes - Jonathan Benumaf.
12. Anaesthesia and co existing diseases - Stoelting.
13. Anaesthesia Equipment - Ehrenwerth and James. B. Eiscnkraft
14. Text Book of Anaesthesia - A. R. Aitken Head & G. Smith
15. Anaesthesia for infants and children - Smith
16. Obstetrics Anaesthesia - Bonica
17. Regional Anaesthesia - Macintosh series
18. Epidural Analgesia - Bromage
19. Medical problems of Anaesthesia - Kaulman
20. Principles of Anaesthesiology - Collins
21. Anaesthesia for Orthopedic Surgery - Zauder and others
22. Neural Blockade - Cousins
23. Cardiac Anaesthesia – Kaplan
24. Thoracic Anaesthesia - Kaplan and Muschin
25. Regional Anaesthesia - Labot
26. Drugs Interactions & other basic Medical science - Anaesthesia speciality books.

Journals

1. Anesthesia and Analgesia
2. Anaesthesiology
3. Anaesthesia I
4. Acta Anaesthesia Scandinavica
5. Canadian Journal of Anaesthesia
6. Indian Journal of Anaesthesiology
7. British Journal of Anaesthesia
8. Expert Anaesthesia
9. Recent advances in Anaesthesiology
10. Year Book of Anaesthesia
11. Anesthesia Clinics
12. Clinics in North America in Anaesthesiology

CHAPTER IV

Monitoring Learning Progress

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 shall be 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. Model checklists are given in this chapter which may be copied and used.

The learning out comes to be assessed should include:

1. Personal Attitudes.
2. Acquisition of Knowledge.
3. Clinical and operative skills and
4. Teaching skills.

1. Personal Attitudes: The essential items are:

- a. Caring attitude.
- b. Initiative.
- c. Organisational ability.
- d. Potential to cope with stressful situations and undertake responsibility.
- e. Trust worthiness and reliability.
- f. To understand and communicate intelligibly with patients and others.
- g. To behave in a manner that establishes professional relationships with patients and colleagues.
- h. Ability to work in a team.
- i. 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.

2. 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.

- a. **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, Chapter IV)
- b. **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)
- c. **Clinico-pathological conferences.** This should be a multidisciplinary 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.
- d. **Medical Audit.** Periodic morbidity and mortality meeting shall be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

3. Clinical skills:

- a. **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).
- b. **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).
- c. **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)

4. 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, Chapter IV)

5. Periodic tests: In case of degree courses of three years duration, the department may conduct three tests, two of them be annual tests, one at the end of first year 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, practical / clinical and viva voce.

6. Work diary: 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.

7. 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.

8. 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 counseled 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 him or herself right.

CHAPTER IV (Contd)
Format of Model Check Lists

Check List-I

**MODEL CHECK-LIST FOR EVALUATION OF
JOURNAL REVIEW PRESENTATIONS**

Name of the Student:

Name of the Faculty/Observer:

Date:

Sl 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 & 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

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.	Whether other relevant publications consulted					
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)

Name of the Student:

Name of the Faculty/Observer:

Date:

SI No	Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Regularity of attendance					
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.	Beside manners					
8.	Rapport with patients					
9.	Counseling patient's relatives for blood donation or Postmortem and Case follow up.					
10.	Overall quality of ward work					
	Total Score					

Check List - IV

EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the Student:

Name of the Faculty:

Date:

SI No	Points to be considered	Poor 0	Below Average 1	Average 2	Good 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					
10.	Investigations required <ul style="list-style-type: none"> ▪ Complete list ▪ 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					
	Total Score					

Check List - V

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

SI No		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 AV aids appropriately		

Check List - VI

MODEL CHECK LIST FOR DISSERTATION PRESENTATION

Name of the Student:

Name of the Faculty:

Date:

Sl No	Points to be considered divine	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					
	Total Score					

Check List - VII

**CONTINUOUS EVALUATION OF DISSERTATION
WORK BY GUIDE / CO GUIDE**

Name of the Student:

Name of the Faculty:

Date:

Sl No	Items for observation during presentations	Poor 0	Below Average 1	Average 2	Good 3	Very Good 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					
6.	Others					
	Total Score					

LOG BOOK

Table 2: Diagnostic and Operative procedures performed

Name:

Admission year:

College:

Date	Name	ID No.	Procedure	Category O, A, PA, PI*

*** Key:**

O - Washed up and observed

A - Assisted a more senior Surgeon

PA - Performed procedure under the direct supervision of a senior Surgeon

PI - Performed independently

Model Overall Assessment Sheet

Academic Fear:

Name of the College:

SI No	Faculty Member & Others	Name of Student and Mean Score																		
		A	B	C	D	E	F	G	H	I	J									
1.																				
2.																				
3.																				
4.																				
5.																				
	Total Score																			

Chapter V

Medical Ethics

Sensitisation 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 patients, 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 and General Objective stated in Chapter II and develop human values it is urged that **ethical sensitisation** be achieved by lectures or discussion on ethical issues, clinical discussion of cases with an important ethical component and by including ethical aspects in discussion in all case presentation, bedside rounds and academic postgraduate programmes.

Course Contents

1. 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
 - Beneficence = fraternity
 - Justice = equality
 - Self determination (autonomy) = liberty

3. 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.

4. 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.
- Semen Intra-fallopian Transfer (SIFT).
- Gamete Intra-fallopian Transfer (GIFT).
- Zygote Intra-fallopian Transfer (ZIFT).
- Genetic Engineering.

6. 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.
- Allocation of resources in health care.
- Malpractice and Negligence.

8. Research Ethics

- Animal and experimental research / humaneness.
- 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 out criteria towards decisions.

Recommended Reading

1. Francis C.M., Medical Ethics, 1 Ed, 1993, Jaypee Brothers, New Delhi, p 189, Rs. 150/-
2. Good Clinical Practices : GOI Guidelines for clinical trials on Pharmaceutical Products in India (www.cdsco.nic.in)
3. INSA Guidelines for care and use of Animals in Research – 2000.
4. CPCSEA Guidelines 2001 (www.cpcsea.org.)
5. Ethical Guidelines for Biomedical Research on Human Subjects, 2000, ICMR, New Delhi.
6. ICMR Guidelines on animal use 2001, ICMR, New Delhi.