



BLDE UNIVERSITY

PG CURRICULUM 2016-17

M.D. Anaesthesiology

Published by

BLDE UNIVERSITY

[Declared as Deemed to be University u/s 3 of UGC act, 1956, vide notification No.F.9-37/2007-U.3(A)]

The Constituent College

SHRI B. M. PATIL MEDICAL COLLEGE, HOSPITAL & RESEARCH CENTRE

Smt. Bangamma Sajjan Campus, B. M. Patil Road (Sholapur Road), Vijayapura - 586103, Karnataka, India.

University: Phone: +918352-262770, Fax: +918352-263303, Website: www.bldeuniversity.ac.in, E-mail: office@bldeuniversity.ac.in

College: Phone: +918352-262770, Fax: +918352-263019, E-mail: bmpmc.principal@bldeuniversity.ac.in



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The Constituent College

SHRI B. M. PATIL MEDICAL COLLEGE, HOSPITAL AND RESEARCH CENTRE

BLDEU/REG/PG/2016-17/ 505

June 18, 2016

NOTIFICATION

Subject: **Revised Curriculum for the Post Graduate Degree and Diploma Course-2016**

Reference:

1. Medical Council of India Regulation on Graduate Medical Education, 1997 and subsequent amendments of the same from time-to-time.
2. Minutes of the meeting of the Academic Council of the University held on April 29, 2016.
3. Minutes of the meeting of the BOM of the University held on June 18, 2016.

The Board of Management of University is **pleased to approve the Curriculum for Post Graduate Degree and Diploma Course at its meeting held on June 18, 2016.**

The revised curriculum shall be effective, from the Academic Session 2016-17 onwards, for Post Graduate Degree and Diploma Course in the Constituent College of the University viz. Shri B. M. Patil Medical College, Hospital and Research Centre, Vijayapura.

REGISTRAR

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BLDE University, Vijayapura.

To,
The Dean, Faculty of Medicine and Principal
Shri B. M. Patil Medical College,
Hospital and Research Centre,
Vijayapura.

Copy to:-

- The Secretary, UGC, New Delhi
- The Controller of Examinations
- Prof. & HODs of Pre, Para and Clinical Departments.
- PS to Hon'ble President
- PS to Hon'ble Vice-Chancellor

Smt. Bangaramma Sajjan Campus, Sholapur Road, Vijayapura - 586103, Karnataka, India.

Vision & Mission

- Excellence in all our endeavours.
- Committed to provide globally competitive quality medical education.
- Provide the best health care facilities in this backward region, in particular, to socially disadvantaged sections of the society.
- Constantly striving to become a Reputed research University with world-class infrastructure, latest tech-tools for teaching/research and adopting global best practices.

.Section - I

Goals and General Objectives of Postgraduate Medical Education Program

Goal

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

- (i) Who shall recognize the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy;
- (ii) Who shall have mastered most of the competencies, retraining to the specialty, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system;
- (iii) Who shall be aware of the contemporary advances and developments in the discipline concerned;
- (iv) Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology; and
- (v) 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:

- (i) Recognize the importance of the concerned specialty in the context of the health need of the community and the national priorities in the health sector.
- (ii) Practice the specialty concerned ethically and in step with the principles of primary health care.
- (iii) Demonstrate sufficient understanding of the basic sciences relevant to the concerned specialty.
- (iv) Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive and promotive measures/strategies.
- (v) Diagnose and manage majority of the conditions in the specialty concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.
- (vi) Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability related to the specialty.
- (vii) Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation.
- (viii) Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.
- (ix) Play the assigned role in the implementation of national health programs, effectively and responsibly.
- (x) Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.
- (xi) Develop skills as a self-directed learner; recognize continuing educational needs; select and use appropriate learning resources.
- (xii) Demonstrate competence in basic concept of research methodology and epidemiology, and be able to critically analyse relevant published research literature.
- (xiii) Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.
- (xiv) Function as an effective leader of a team engaged in health care, research or training.

Statement of the Competencies

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

Components of the PG Curriculum

The major components of the PG curriculum shall be:

- Theoretical knowledge
- Practical/clinical Skills
- Training in writing thesis/research articles
- Attitudes, including communication.
- Training in research methodology, medical ethics & medicolegal aspects

Source: Medical Council of India, Regulations on Postgraduate Medical Education, 2000. [amended upto January 2010]

Eligibility for Admission:

Eligibility requirements for Post Graduate Diploma and Degree Courses are : -

1. The candidates seeking admission to these courses should have passed MBBS from the college recognized by Medical Council of India.

Eligibility requirements for Post graduate degree in superspecialty courses, M.Ch./D.M are:

The candidate seeking admission to these courses should have passed MS/MD from the college recognized by Medical Council of India.

2. As per the requisitions of statutory bodies, as laid out in post graduate regulations 2000 of Medical Council of India and its amendments thereof, the minimum percentage of marks in the entrance test conducted by the University for eligibility for admission to Post Graduate courses in broad specialties and super specialties shall be 50 percent for candidates belonging to General category and 40 percent for the candidates belonging to Scheduled Caste, Scheduled Tribes and Other Backward Classes. Eligibility for persons with locomotor disability of lower limbs category will be 45 percent.

Eligibility for Foreign / PIO / NRI students will be based on qualifying examination marks.

The MCI norms to qualify for Admissions

Candidates seeking admission to these Post Graduate Degree courses should have passed M.B.B.S. recognised by Medical Council of India or equivalent qualification and should have obtained permanent Registration from the Medical Council of India or any of the State/ Medical council or candidate should register the same within one month from the date of admission, failing which the admission of the candidate shall be cancelled. Provided that in the case of a foreign national, the MCI may on the payment of prescribed fee for the registration, grant temporary registration for the duration of post graduate training restricted to the medical college/ institute to which the applicant is admitted for the time being exclusively for post graduate studies; provided further, that temporary registration to such foreign national shall be subjected to the condition that such person is duly registered with appropriate registering authority in his /her country wherefrom he has obtained his basic medical qualification ,and is duly recognized by the corresponding Medical Council or concerned authority..

If the candidate fails to fulfill the relevant eligibility requirements as mentioned above he/she will not be considered eligible for admission for Medical Postgraduate Degree and Diploma Courses even if he/she is placed in the merit list of BLDEU-PGET/BLDEU-SUPERSPECIALTY ET.

Obtaining Eligibility Certificate by the University before making Admission

Candidate shall not be admitted for any postgraduate degree/diploma course unless he/she has obtained and produced the eligibility certificate used by the University. The candidate has to make an application to the University with the following documents along with the prescribed fee:

1. MBBS pass/degree certificate issued by the University.
2. Marks cards of all the university examinations passed MBBS course.
3. Attempt Certificate issued by the Principal
4. Certificate regarding the recognition of the Medical College by the Medical Council of India.
5. Completion of internship certificate.

6. 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.
 7. Registration by any State Medical council and
 8. Proof of SC/ST or OBC or physically handicapped status, as the case may be.
- In addition to the above mentioned documents, candidate applying for admission to superspecialty courses has to produce degree/pass certificate of MD/MS degree with prescribed fee.

Intake of Students

The intake of students to each course shall be in accordance with the ordinance in this behalf.

Course Duration

- a. M.D. / M.S. Degree Courses:

The course of study shall be for a period of 3 years consisting of 6 terms including examinations. For Candidates possessing recognized two year Postgraduate Diploma in the same subject the duration of the course shall be two years including examinations. (MCI PG REG 2000 10:1)

- b.D.M/M Ch Degree Courses;(MCI PG REG 2000,10:2)

The duration of these courses shall be for a period of 3 years including examinations.

- c.Diploma Courses:

The course of study shall be for a period of 2 years consisting of 4 terms including examinations(MCI PG REG 2000,10.3).

Training Method

The postgraduate training for degree/diploma shall be of residency pattern. The post graduate shall be trained with graded responsibilities in the management and treatment of patients entrusted to his/her care. The participation of the students in all facets of educational process is essential. Every candidate 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 program 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.

Attendance, Progress and Conduct

A candidate pursuing degree/diploma course should work in the concerned department of the institution for the full period as a full time student. No candidate is permitted to run a clinic/laboratory/nursing home while studying postgraduate course

Each year shall be taken as a unit for the purpose of calculating attendance. 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. Every Candidate is required to attend a minimum of 80% of the training during each academic year of the post graduate course. This shall include assignments, assessed full time responsibilities and participation in all facets of educational process. 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. Leave benefits shall be as per university rules.

A post graduate student pursuing degree course in broad specialities, MD,MS and superspecialty courses DM,M.Ch would be required to present one poster presentation, read one paper in national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him/her to be eligible to appear at the university degree examinations.(MCI,PG 2000,13.9)

Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University Examinations.

Monitoring Progress of Studies

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

The learning out comes to be assessed include:

- Personal Attitudes,
- Acquisition of Knowledge,
- Clinical and operative skills,
- Teaching skills.

Personal Attitudes:

The essential items are :

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

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.

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 post graduate students of all specialties. Few topics are suggested here.

- Bio-statistics
- Use of library,
- Journal review
- Use of computers,
- Appropriate use of AV aids
- Research Methods,
- Search of literature,
- Rational drug therapy
- Medical code of Conduct and Medical Ethics
- National Health and Disease Control Programmes
- Communication skills etc.

These topics may preferably taken up in the first few weeks of the 1st year commonly for all new postgraduates

b) Integrated teaching : These are recommended to be taken by multidisciplinary teams for selected topics, eg. Jaundice, Diabetes mellitus, thyroid diseases etc.

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

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.

Clinico-Pathological conferences:

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

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

Clinical Skills: Day to Day Work: Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills

Clinical Meetings:

Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list

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.

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

Work diary / Log Book:

Every candidate shall maintain a work diary and record his/her participation in the training programs conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any, conducted by the candidate. The work diary shall be scrutinized by concerned teachers periodically and certified, by the Head of Department and Head of the Institution, and presented during university practical / Clinical examination.

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 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.

One of these practical/clinical tests should be conducted by OSPE(objective structured practical examination or OSCE(objective structured clinical examination) method.

.Records and marks obtained in such tests will be maintained by the Head of Department and sent to the University, when called for,

In case of diploma courses of two years duration, the concerned departments may conduct two tests, one of them be at the end of first year and the other in the second year three months before the final examination. The tests may include written papers, practical /clinical and viva voce.

One of these practical/clinical tests should be conducted by OSPE or OSCE method.

Records: Records and marks obtained in tests will be maintained by the Head of the Departments and will be made available to the University or MCI.

Procedure for defaulter:

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 himself or herself right.

Dissertation: Every candidate pursuing MD/MS degree course is required to carry out work on a selected research project under the guidance of a recognized post graduate teacher. The results of such a work shall be submitted in the form of a dissertation.

The dissertation is aimed to train a post graduate student in research methods and techniques. It includes identification of a problem, formulation of 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.

Every candidate shall submit to the Registrar (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 the proper channel.

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.

The dissertation shall be written under the following headings:

1. Introduction
2. Aims or Objectives of study
3. Review of Literature
4. Material and Methods
5. Results
6. Discussion
7. Conclusion
8. Summary
9. References
10. Tables
11. Annexure

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.

Four copies of dissertation thus prepared shall be submitted to the Controller of Examinations six months before final examination on or before the dates notified by the University.

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.

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 recognized as post graduate teachers.

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

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.

Schedule of Examination:

The examination for M.D. /M.S and DM/M.Ch courses shall be held at the end of three academic years (six academic terms). The examination for the diploma courses shall be held at the end of two academic years (four academic terms).

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.

Scheme of Examination

M.D. /M.S. Degree

M.D. / M.S. Degree examinations in any subject shall consist of dissertation, written papers (Theory), Practical/Clinical and Viva Voce.

Dissertation:

Every candidate shall carryout work and submit a Dissertation as indicated above. Acceptance of dissertation shall be a precondition for the candidate to appear for the final examination.

Written Examination (Theory):

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.

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 students 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.

Viva Voce:

Examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills.

The total marks shall be 100:

- 80 Marks, for examination of all components of syllabus
- 20 Marks for Pedagogy

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.

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/ clinical and(3)viva voce examination. The candidate should pass independently in practical/clinical examination and Viva Voce vide MCI pg 2000 reg no 14(4)(Ciii)

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

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 of marks is 75 percent and above.

Distinction will not be awarded for candidates passing the examination in more than one attempt.

D.M/M.Ch Degree

DM/M.Ch Degree examinations in any subject shall consist of written theory papers(theory),practical/clinical and Viva voce.

Written Examination (Theory):

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.

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 students 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, 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.

Viva Voce:

Examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills.

The total marks shall be 100:

- 80 Marks, for examination of all components of syllabus
- 20 Marks for Pedagogy

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.

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(3)viva voce examination. The candidate should pass independently in practical/clinical examination vide MCI pg 2000 reg no 144-c(iii).

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 of marks is 75 percent and above.

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

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 of marks is 75 percent and above.

Distinction will not be awarded for candidates passing the examination in more than one attempt.

Diploma Examination:

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

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.

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.

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.

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 / 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 Controller of Examinations.

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 of marks is 75% and above. Distinction will not be awarded for candidates passing the examination in more than one attempt.

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.

Number of Candidates per day:

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

MD / MS Courses: Maximum of 6 per day

Diploma Courses: Maximum of 6 per day

DM/M.Ch Courses: Maximum of 3 per day

SECTION - II

Post Graduate Degree Course (MD) in Anaesthesiology

Goal:

The postgraduate course, M.D. (Anaesthesiology) should enable a medical graduate to become a competent specialist, acquire knowledge and skills in educational technology for teaching medical, dental and health sciences and conduct research in bio-medical science.

The MD course in anaesthesiology is a three year integrated course after satisfactory completion of the course the candidate shall be fully conversant with theory and practical aspects of anaesthesiology and able to practice anaesthesiology completely, confidently and safely in the community that he/she serves.

Objectives

- 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, 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 advances and developments in anaesthesiology.
- 4) Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology:
- 5) Who shall have acquired the basic skills in teaching the medical and paramedical students.
- 6) Continue to evince keen interest in learning and teaching Anaesthesiology whether he is in a teaching institution or is a practicing anaesthesiologist.

Specific Learning Objectives:

The specific learning objectives of postgraduate training course in Anaesthesiology would be to train a MBBS doctor who will:

- 1 .Practice independently the art and science of anaesthesiology, backed by scientific knowledge and skill based approach.
- 2.Undertake responsibilities in critical care, trauma, and respiratory therapy and resuscitation of unconscious patients.
3. Become skilled in acute and chronic pain management.
4. Know the principles of research methodology and modes of consulting library.
5. Exercise empathy and a caring attitude and maintain high ethical standards.
6. Be a motivated 'teacher' - defined as an Anaesthesiologist keen to share his knowledge and skills with a colleague or a junior or any learner.

The objectives may be considered under the following headings.

- A. Knowledge
- B. Skills
- C. Human values, ethical practice and communication abilities

D. Research activities.

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

A. Knowledge:

- Demonstrate understanding of basic sciences relevant to anaesthesia.
- Describe the anaesthetic management of common and uncommon surgical ailments belonging to various branches of surgery, of all ages, requiring operative interventions with a basic knowledge of the aetiology, pathophysiology and the surgical treatment of the conditions.
- Describe the underlying theoretical background of mechanism of pain, pain perception and pain management.
- Describe the theory of the underlying aetiology, mechanism and management of the conditions requiring resuscitation.
- Demonstrate understanding of the theoretical basis of polytrauma and the science of resuscitation.
- Recognize the conditions that may be outside the area of his competence and refer them to an appropriate specialist prior to anesthetizing them.
- Update himself/herself by self-study and by attending continuing medical education courses, conferences and seminars relevant to anaesthesia.
- Demonstrate understanding of medico-legal aspects of anaesthesia.
- Undertake audit, use information technology, tools and carry out research, both basic and clinical with the aim of publishing his work and presenting his work at various scientific fora.
- Describe anaesthesia for laser surgeries
- Describe outpatient anaesthesia and anaesthesia at high altitudes.

B. Skills: Practical / Clinical

- Perform 'pre-anaesthetic evaluation' of patients undergoing surgery by taking, proper clinical history, examining the patient, ordering relevant investigations and interpreting them to have additional information about the surgical condition, and / or the associated medical condition, which warrant the modification of the proposed anaesthetic management.
- Administer anaesthesia (general and or regional) to common surgical operations independently and to allied specializations like cardiac surgery, neurosurgery.
- Provide Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS).
- Manage airway and perform ventilatory care of unconscious and polytrauma cases as a member of trauma team and critical care unit team.
- Undertake complete clinical monitoring of the patients during preoperative, intraoperative post operative periods and also of the patients who are on ventilators in ICU& CCU.
- Perform acute and chronic pain management.

C. Human values, ethical practice and communication abilities

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

D. Research activities

Student will be encouraged to have research activities other than dissertation and publish at least one article during the course of the study.

III. COURSE CONTENTS:

Theory

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, Anatomy, Physiology, Pharmacology. It is intended as a guide to the candidates and it is not comprehensive. As and when there is a newer development, it becomes eligible for inclusion. Hence, the candidates should be familiar themselves with the current content of the scientific journals and reviews of major topics in Anaesthesia.

1. History of Anaesthesiology.
2. Basic Sciences related to Anaesthesia including Anatomy, Physiology, Pharmacology, Biochemistry.
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.
 - i. Pre anaesthetic evaluation and preparation.
 - ii. Principles and Practice of Anaesthesiology including pre-operative , peroperative and post operative care of patients belonging to General Surgery, Obstetrics and Gynecology, ENT, Ophthalmology, Orthopedics, and other superspecialities like Cardio thoracic Surgery, Neurosurgery, Plastic Surgery and Surgical Endocrinology, Surgical Oncology, Pediatric, Urology, Dental Surgery, Laparoscopic Surgery, Organ transplantation etc.
 - iii. Blood transfusion-Fluid and Electrolyte balance, - Acid Base Balance.
 - iv. Different methods of anaesthetic techniques.
 - v. Regional anaesthesia including spinal, epidural anaesthesia and caudal block, brachial Plexus block.

- vi. Local Anaesthesia including peripheral nerve blocks and sympathetic nerve block.
 - vii. Complication in Anaesthesiology and their management both pre operatively and post operatively.
 - viii. Fires and Explosion in operation theatre.
 - ix. Operation Theatre sterilization procedures.
6. Pain Clinic organization and management. Pain pathway and management of acute and chronic pain.
 7. Respiratory therapy and management of both acute and chronic respiratory insufficiencies and ventilator commitments in intensive care unit, surgical intensive care unit, medical intensive care unit, neuro surgical intensive care unit and trauma care.
 8. Critical Care Anaesthesiology and Trauma Care Unit and Resuscitation.
 - Anaesthesia in abnormal environments like high altitude anaesthesia.
 - Anaesthesia for day care surgery.
 - Anaesthesia for diagnostic procedure like endoscopies, Computerized Tomographic Scan (C.T. Scan) Magnetic Resonance Imaging (M.R.I.) .
 9. Informed consent & medico-legal issues: Understanding the implications of acts of omission and commission in practice. Issues regarding consumer protection act. Implications in medico-legal cases.
 10. Communication skills with colleagues, teachers, patients, and patient's relatives.
 11. Principles of anaesthesia audit, understanding the audit process and outcome; methods adopted for the same.
 12. Principles of Evidence Based Medicine and its application in anaesthetic practice.
 13. Medical ethics/social responsibilities of the anesthesiologists.
 14. Record keeping: Ability to keep records as scientifically and as completely as possible.

Clinical / Practical Training

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.

Operative Skills

Skills may be considered under the following headings:

1. Basic Graduate Skills.
2. Anaesthesia Procedures.
3. Critical Care Procedures.
4. Emergency Room Procedures.
5. Pain Alleviation Procedures.
6. Special Monitoring Techniques.

1. Basic Graduate Skills:

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

Procedure	Category	Year	No
Recording of vital signs	PI	I	150
Insertion of intravenous lines	PI	I	100
Insertion of nasogastric tubes	PI	I	50
2) Anaesthesia Procedures:			
Airway Insertion			
Oropharyngeal	PI	I/II/III	50/100/100
Nasopharyngeal	PI	I/II/III	25/25/35
Intubation			
Orotracheal intubation	PI	I/II/III	25/50/100
Nasotracheal Intubation	PI	I/II/III	25/25/25
Endobronchial (double lumen tube)	PA	II/III	02/05
Retrograde intubation	O	II/III	02/02
Fiber optic intubation	PA	II/III	02/02
LMA			
LMA insertion	PI	I/II/III	25/25/25
Intubating LMA	PI	II/III	02/05
Regional blocks			
Subarachnoid block	PI	I/II/III	50/100/100
Epidural block	PI	I/II/III	15/25/50
Caudal block	PI	I/II/III	05/10/15
Brachial plexus block	PI	II/III	05/10
Wrist block	PI	II/III	02/05
Ankle block	PI	II/III	02/05
Popliteal block	PI	II/III	02/05
Intravenous Regional Analgesia	PI	II/III	05/10
Three in one block	PI	II/III	02/05
Rectus sheath block	PA	II/III	02/02
Hernia block	PI	II/III	05/10
Anaesthetic procedures			
Major anaesthesia procedures	PA/PI	I/II/III	50/100/150
Minor anaesthesia procedures	PA/PI	I/II/III	50/100/200

3) Critical Care Procedures:

Insertion of arterial lines	PI	II/III	05/05
Insertion of central venous lines	PI	II/III	05/15
Intercostal drainage	O	II/III	05/05
Tracheostomy	O	III	10
Ventilatory management of patients	PI	II/III	10/25
Sampling for and interpretation of arterial blood gases (ABG)	PI	II/III	10/50
Correction of electrolyte imbalance	PI	II/III	10/50
Fiber Optic Bronchoscopy	O	III	10
Cricothyrotomy	O	III	10
Insertion of pulmonary artery catheter	O	III	05

4) Emergency Room Procedures:

Management of airway obstruction	PI	II/III	10/25
Management of shock	PI	II/III	10/25
Management of respiratory failure	PI	II/III	05/10
Management of cardiac failure	PI	II/III	02/05
Cardio Pulmonary Resuscitation (CPR)			
Basic Life Support and Advance Cardiac Life Support	PI	II/III	05/15

5) Pain Alleviation Procedures:

Acute pain management			
Chronic pain management			
Postoperative pain management	PI	II/III	50/100
Labour analgesia	PI	II/III	10/15

Under Radiographic Guidance

Stellate ganglion block	PA	III	02
Coeliac ganglion block	PA	III	02
Trigeminal nerve block	PA	III	02
Neurolysis and other nerve ablation			
Procedures including	PA	III	02
Ultrasound guided nerve blocks			
TENS	PI	II/III	02/02

6) Special Monitoring Techniques

Bi-Spectral Index (BIS)	O	II/III	05/05
Nerve stimulator	PA	II/III	05/05
Invasive Blood Pressure monitoring (IBP)	PA	II/III	05/05
Pulmonary Artery Pressure monitoring (PAP)	O	II/III	05/05
Central Venous Pressure monitoring (CVP)	PA	II/III	05/05
Trans Esophageal Echocardiography (TEE)	O	II/III	05/05

Year Wise Structured Training Schedule

First Year:

I Orientation Programme –3 months

- a) Basic sciences related to Anaesthesia Theoretical knowledge of Anatomy & Physiology
- b) Special emphasis on clinical examination of patients, learning clinical methods, arriving at correct diagnosis.
- c) Pre anaesthetic evaluation under supervision.
- d) Choosing a topic for dissertation, submission of synopsis to the University, collection of literature, conduct pilot studies.

II Other topics -- to be dealt with in the first year are

1. Cardiopulmonary brain resuscitation (CPBR)
2. Basic life support & Advanced cardiac life support
3. Anaesthesia skills, including
 - a) Setting up of Anaesthesia machine, monitors & Ventilators.
 - b) Assisting the conduct of anaesthesia for major surgeries
 - c) Initially Assisting the conduct of anaesthesia for minor surgeries and conducting it independently later on.
 - d) Conduct of anaesthesia in out patient department.
 - e) Learn about complications of Anaesthesia & their proper management.
 - f) Monitoring of patients throughout perioperative period. Become skilled in using and interpreting the following routine noninvasive monitors intraoperatively
 - i) Electro Cardiography (ECG) with ST segment analysis
 - ii) Non Invasive Blood Pressure monitoring (NIBP)
 - iii) Capnograph: values and changes in waveform
 - iv) Pulse oximetry: values and changes in waveform
 - v) Neuromuscular blockade monitor
- 4 Assisting setting up of anaesthesia machine, monitor and ventilator.
- 5 Assisting the conduct of anaesthesia for major surgeries; knowledge about the complications of anaesthesia.
- 6 Assisting for short anaesthesia initially and later on doing independently under
- 7 Conduct of anaesthesia in Out Patient Department (OPD) under supervision

- 8 Cardio Pulmonary brain Resuscitation (CPBR) training and learning Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS).

III 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, subspecialties of anaesthesia. Assisting senior anesthesiologists in specialized branches like pediatric surgery, cardio thoracic surgery, critical care trauma, Neurosurgery etc.
2. Anaesthetic Skills: At the end of 2nd year the student should be capable of:
 - Anaesthetizing patients without assistance but under supervision.
 - Identifying the complication of anaesthesia and manage them independently but under supervision.
 - Setting up of anaesthesia machine, monitor and ventilator independently.
3. Conference and 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, and interaction with guide. Organization of the data, writing the manuscript of dissertation at end of 2nd year.
5. The student should be actively involved in presentation of seminars, journal clubs, and 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 3rd 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 lead in conducting seminars, journal clubs, case discussions, panel discussions with I and II year students. The third year students should also involve in teaching undergraduate students specially bedside clinics.
4. Dissertation: The completed dissertation must be submitted to the University, 6 months before the notified date of examination.
5. The student must get expertise in the specialized procedures as noted in the course content table.

IV. 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.

A. Theoretical Teaching

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:

- 1) Initial introductory lectures about the subject.
- 2) Use of library
- 3) Research Methods
- 4) Communication Skills
- 5) Medical Code of Conduct and Medical Ethics.
- 6) National Health and Disease Control Programs.
- 7) Bio-statistics etc.

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

b) **Integrated Lectures:** These are recommended to be taken by multidisciplinary teams for selected topics, e.g. Applied anatomy, Physiology, Pharmacology of commonly used anaesthetic drugs etc.

2. Journal Club : Recommended to be held as for the norms of the Medical Council of India (MCI) rules. All the postgraduate students are expected to attend and actively participate in discussion and enter in the logbook relevant details. Further, every candidate must make a presentation from the allotted journal(s) and relevant points in the logbook during his/her course. The presentations would be evaluated using checklists and would carry weightage for internal assessment (as per annexure). A timetable with names of the students and the moderator should be announced at the beginning of every year.

3. Subject seminar: Recommended to be held as for the norms of MCI rules. All the postgraduate students are expected to attend and actively participate in discussion and enter in the logbook relevant details. The presentations would be evaluated using checklists and would carry weightage for internal assessment (as per annexure). A timetable for the subject with names of the student and the moderator should be scheduled at the beginning of every year.

4. Case Discussion: Recommended to be held once a week. All the post graduate students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A time table for the case presentation with names of the students should be announced in advance.

5. **Pro & Con** - There will be one “Pro & Con” session per month where in controversial topics are taken up by the Post Graduate students for discussion.
6. **How I do it?**- An interesting and intriguing hypothetical clinical scenario is taken up for discussion , once in a month .
7. **Ward Rounds:** May be service rounds or teaching rounds.
 - a) **Service Rounds:** Postgraduate students should do ward rounds every day.
 - i) For pre anaesthetic evaluation of the patients posted for operation.
 - ii) And to do the post anaesthetic follow up of operated patients for alleviation of post-operative pain and for diagnosis and management if any of the post-operative sequelae.
 - b) **Teaching Rounds:** Every unit should have grand round for teaching clinical methods and pre anaesthetic evaluation.
Entries of (a) and (b) should be made in the logbook.
8. **Clinico-Pathological conference (CPC):** Recommended once a month for all post graduate students. Presentation to be done by rotation. Presentations will be assessed using checklist. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPC’s.
9. **Inter departmental meetings (Horizontal and vertical integration) :** Strongly recommended particularly with departments of surgery,medicine and allied specialities for discussion of interesting topics.To be conducted at least once in three months. Postgraduate students should attend these meetings and relevant entries must be made in the logbook.
10. **Critical Incident meetings** –These are held every month in the department. Morbidity and mortality meeting will be held as and when need arises in association with concerned departments. Presentation is to be done by rotation and by the students who had conducted/assisted anaesthetic management.
11. **Teaching skills:** Postgraduate students must teach undergraduate students (e.g. medical, paramedical, nursing) by taking demonstrations, bedside clinics, tutorials, lectures etc. Assessment is made using a checklist by faculty. Record of their participation should be kept in the logbook. Training of postgraduate students in educational technology is recommended.
12. **Continuing Medical Education Programme (CME):** At least one state / national level CME programme should be attended by each student in three years.
13. **Conferences:** Attending conferences, participation and presentation of scientific paper should be encouraged.
14. **Research Activities:** The Post-graduate students are to be encouraged to carry out research activities in the department other than dissertation work.

15. **Student Symposium:** Recommended as an optional multi disciplinary program. The evaluation may be similar to that described for subject seminar.
16. **Scientific research society Meetings :** Attending SRS meetings and actively participating in them.
17. **Participation in state/ National conferences:** A “Post –Graduate of PG course in broad specialities/ Super specialities would be required to present one poster or oral presentation at a National/ State Conference and one research paper which should be published / accepted for publication /sent for publication during the period of his post – graduate studies, so as to make him eligible to appear at the post-graduate degree examination.

B. Rotational Postings in other departments: (Subject Wise)

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 sub-specialities will be 8 months and the remaining 2 years and 4 months in the mother department.

Basic Sciences :

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

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

Physiology : Thorough revision of all the systems, in particular Cardio Vascular System and Respiratory System.

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

Allied Speciality : Students should be posted to Intensive Care Unit (ICU), Intensive Coronary Care Unit (ICCU), Surgical Intensive Care Unit (SICU), Trauma unit and pain clinic during 2nd year of training for two weeks in each, for total duration of two months.

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

Cardio thoracic Surgery, Cardiac Cath Lab	--	4 weeks
Neuro surgery	--	4 weeks
Pediatric surgery	--	4 weeks
Cancer surgery	--	2 weeks
Oromaxillary surgery	--	2 weeks
Plastic surgery	--	2 weeks

Urology	--	2 weeks
Casualty Posting	--	2 weeks
Anaesthesia for investigative procedure like CT & MRI Scan, Lithotripsy,	--	2 weeks

		24 weeks

V. OTHER CRITERIA TO BE FULFILLED FOR MD COURSE

1. Internal evaluation

During the course of three years, the department will conduct three tests. Two of them will be annual, one at the end of first year and other at the end of second year. The third test will be preliminary examination which may be held three months before the final examination. The test may include the written papers, practicals / clinicals and viva voce. Objective structured clinical evaluation shall be included in the second and third periodical tests. Records and marks obtained in such tests will be maintained by the head of the department and will be sent to the university when called for.

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

2. Maintenance of Log Book:

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

Format for the log book for the different activities is given in Tables 1, 2 and 3 and Check lists I to VII has been enclosed as a annexure

3. Monitoring progress of studies

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

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

i) **Personal Attitudes** :The essential items are:

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

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

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

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)

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)

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

- iii) **Clinical skills**

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

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).

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)

- (iv) **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)
- (v) **Dissertation :** 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 VI and VII).
- (vi) **Periodic tests** During the course of three years, the department will conduct three tests. Two of the will be annual, one at the end of first year and other at the end of second year. The third test will be preliminary examination which may be held three months before the final examination. The test may include the written papers, practicals / clinicals and viva voce Objective structured clinical evaluation shall be included in the second and third periodical tests.
- (vii) **Work diary / Log Book** - Every candidate shall maintain a work diary and record his/her participation in the training program 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 scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the university practical/clinical examination.
- (viii) **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.

4. Dissertation:This is an essential criterion towards the fulfillment of MD course. Refer section –I for details.

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 himself or herself right.

VI SCHEME OF EXAMINATION

A) Theory Examination:

Written examination shall consist of four question papers each of three hours duration. Total marks for each paper will be 100.

Type of Questions	Number of Questions	Marks for each question	Total Marks
Long essay	2	20	40
Short essay	6	10	60
GRAND TOTAL			100

Paper I : Basic Science as applicable to Anaesthesia. 100 marks

1. Applied Anatomy.
2. Applied Physiology.
3. Applied Pharmacology.
4. Applied Physics.
5. Applied Biochemistry.
6. Patho Physiology.
7. History
8. Equipments.

Paper II : Clinical Practice of Anaesthesia. 100 marks

1. Cardio Vascular System.
2. Respiratory System.
3. Neuro Surgery.
4. Obstetrics and Gyanecology
5. Orthopaedics.
6. Ophthalmology.

Paper III : Clinical Practice of Anaesthesia. 100 marks

1. Pediatrics.
2. Renal and Hepatic system.
3. Endocrines.
4. Haemopoietics.
5. Geriatrics
6. E.N.T.
7. Out Patient Anesthesia and Dental Anaesthesia.
8. Nerve Blocks.

Paper IV Applied Medicine in Relation to Anaesthesia. 100 marks
Theoretical Aspects of pain and pain relief including postoperative and cancer pain.

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

B. Clinical Examination: 200 marks

To elicit competence in clinical skills and to discuss differential diagnostic therapeutic aspects.

Types of Cases	No of Cases	Marks
Long case	1	100
Short Cases	2 (50 marks each)	100
Total	3	200

C. Viva-Voce Examination: 100 marks

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

1. Viva-Voce examination – (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 candidates may also be given instruments/equipments, X-ray images, ABG reports, ECG strips, Drugs Ultrasound/Echocardiography reports for interpretation and questions on these as well as use of instruments will be asked. It includes discussion on dissertation also.

2. Pedagogy Exercise and Log Book – (20 marks)

- (i) Candidate is asked to make a presentation for 8-10 minutes on a topic given in the beginning of clinical examination 10 marks
- (ii) Candidate is asked to make a presentation for 8-10 minutes on the dissertation topic and the review of Log Book. 10 marks

D. Table showing maximum marks:

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

VII. Recommended Books (Latest editions) : (the following list is not exhaustive. Addition and deletion will be done as need arises)

S.NO.	Name of the Book	Name of the author	Publisher
1	A Synopsis of Anaesthesia	Atkinson RS, Rushman GB and Lee J.	Wright - PSG
2	Textbook of Anaesthesia	Aitkenhead AR et al	Churchill-Livingstone
3	Complications in Anaesthesia	Aflee	BI Publications Pvt. Ltd. 2006
4	Clinical Anaesthesia	Aitkenhead AR et al	Churchill Livingstone 1995
5	Textbook of Anaesthesia	Aiteknhhead et al 5/e	BI Publications Pvt. Ltd. 2007
6	Clinical Data Interpretation in anaesthesia and intensive care	Bonner	BI Publications Pvt Ltd. 2002
7	Anaesthesia Viva 2	Blunt 2/e	BI Publications Pvt. Ltd. 2005
8	Obsteric and Gynecologic Anaesthesia	Braveman	BI Publications Pvt Ltd.
9	Atlas of Regional Anaesthesia	Brown	BI Publications Pvt Ltd.
10	Essential Anatomy for Anesthesia	Black SM, et al.	Churchill-Livingstone
11	TEE Pocket Manual	Butterworth	BI Publications Pvt. Ltd.
12	Manual of Orthopedic Anesthesia and Related Pain Syndromes	Bernstein RL, et al	Churchill Livingstone
13	Management of Pain	Bonica JJ, et al	Lea and Febiger
14	Clinical Anesthesia	Barash PG, et al, eds.	Lippincott Williams and Wilkins
15	Perioperative care in cardiac anaesthesia	Cheng	BI Publications Pvt Ltd.
16	Cancer Pain	Casasola	BI Publications Pvt Ltd., 2006
17	Principles of Anesthesiology	Collins VJ, et al	Lea and Febiger
18	Trauma Anesthesia and Intensive Care	Capan LM, et al	Lippincott
19	Peripheral nerve blocks	Chelly	BI Publications Pvt Ltd.
20	Campanion to Clinical Anaesthesia exams 2/e	Corke	BI Publications Pvt. Ltd., 2006
21	Clinical Neuroanaesthesia	Cucci	BI Publications Pvt. Ltd.
22	Physiologic and Pharmacologic Basis of Anesthesia	Collins VJ, et al	Williams and Wilkins
23	Clinical Neuroanaestheisa 2/e	Cucchiara	Churchill Livingstone 1997

24	Basic Physics and Measurements in Anaesthesia	Davis PD, et al.	BI Publications Pvt. Ltd.
25	Quick reference to critical care 3/e	Diepenbrock	BI Publications Pvt. Ltd, 2007
26	Regional Anaesthesia and Pain management	Dureja	BI Publications Pvt. Ltd.
27	Synopsis of Anaesthesia 13/e	Davies Lee	BI Publications Pvt Ltd, 2006
28	Understanding Anesthesia Equipment	Dorsch JA, et al	Williams and Wilkins
29	Anaesthesia Secrets 3/e	Duke	BI Publications Pvt Ltd, 2006
30	Clinical Anaesthesia Procedures of the Massachusetts general Hospital 7/e	Dunn	BI Publications Pvt Ltd 2007
31	Intravenous Anaesthesia 2/e	Dundee JW, et al.,	Churchill Livingstone, 1988
32	Ward's Anaesthetic Equipment, 3/e	Davey A et al,	Saunders, 1992
33	Anatomy for Anesthetists, 8/e	Ellis H, et al.,	BI Publications Pvt. Ltd 2005
34	Anaesthesia and uncommon diseases	Fleisher	BI Publications Pvt. Ltd
35	Pharmacology for anesthesiologists	Fee	BI Publications Pvt. Ltd.
36	Blue prints Pocket: Anaesthesiology	Gaiser	BI Publications Pvt. Ltd.
37	Trauma & Orthopedic Anaesthesia	Geraldine	BI Publications Pvt. Ltd.
38	Paediatric Anesthesia	Gregory GA, et al.,	Churchill Livingstone, 2001
39	Ophthalmic Anesthesia	Gills JP, et al	Slack
40	Physiology of Spinal Anesthesia	Greene NM, et al	Williams and Wilkins
41	Benumol's Airway Management	Hagberg	BI Publications Pvt. Ltd.
42	Wylie and CI Davidson's practice of Anaesthesia	Healey	BI Publications Pvt. Ltd.
43	Foundations of Anaesthesia	Hugh Hemmings	BI Publications Pvt. Ltd.
44	Understanding Pediatric Anaesthesia	Jacob	BI Publications Pvt. Ltd.
45	Anesthesiologist's Manual of Surgery Procedures, 3/e	Jaffie	BI Publications Pvt. Ltd.
46	Vascular Anaesthesia	Kaplan	BI Publications Pvt. Ltd.
47	Kaplan's Cardiac Anaesthesia	Kaplan	BI Publications Pvt. Ltd.
48	Clinical Applications of Ventilatory Support	Kirby RR, et al	Churchill Livingstone

49	Pediatric Cardiac Anaesthesia	Lake	BI Publications Pvt. Ltd.
50	Understanding pain for better clinical practice	Linton	BI Publications Pvt. Ltd.
51	Manual of overdoses and poisoning	Linden	BI Publications Pvt. Ltd.
52	Smith Anaesthesia Infant and children	Motoyama	BI Publications Pvt. Ltd.
53	Chronic pain: A primary care guide to practical management	Marcus	BI Publications Pvt. Ltd.
54	Clinical Anesthesiology	Morgan GE, et al	Lange
55	Anesthesia	Miller RD, et al	Churchill Livingstone
56	Physics for the Anesthetist	Mushin WW, et al	Blackwell
57	Critical care Medicine, 3/e	Marian	BI Publications Pvt. Ltd.
58	The ICU Book, 3/e	Marino	BI Publications Pvt. Ltd.
59	Wall & Melzacks textbook of pain	Mcmahon	BI Publications Pvt. Ltd.
60	Critical Care Nursing, 8/e	Morton	BI Publications Pvt. Ltd.
61	Decision making in pain management, 2/e	Ramamurthy	BI Publications Pvt. Ltd.
62	Atlas of image guide interventional regional	Rathmel	BI Publications Pvt. Ltd.
63	Clinical cases in Anaesthesia, 3/e	Reed	BI Publications Pvt. Ltd.
64	Anesthetic Facial Plastic Surgery	Romo	BI Publications Pvt. Ltd.
65	Management of common medical conditions, An issue of Anaesthesiology clinics	Rosenbaum	BI Publications Pvt. Ltd.
66	Pediatric Critical Care Medicine	Slonim	BI Publications Pvt. Ltd.
67	ACLS Review made incredibly easy	Springhouse	BI Publications Pvt. Ltd.
68	Respiratory care made incredibly easy	Springhouse	BI Publications Pvt. Ltd.
69	Text book of Anaesthesia, 2/e	Smith G and Aitkenhead	Churchill Livingstone, 1990
70	Ambulatory anaesthesia	Springman	BI Publications Pvt. Ltd.
71	Anesthesia and Co-Existing Disease	Stoelting RK, et al	BI Publications Pvt. Ltd.
72	Monitoring in Anesthesia	Saidman LJ, et al	Butterworth
73	Basics of Anesthesia	Stoelting RK	BI Publications Pvt.

			Ltd
74	Anesthesia for Infants and Children	Smith RM	C.V. Mosby-Year Book
75	Pharmacology and Physiology in Anesthetic Practice	Stoelting RK	Lippincott
76	Trauma Anesthesia	Stene J K, et al,	Williams & Wilkins, 1990
77	Clinical Anatomy for Anaesthesiologists	Snell RS, et al,	Appleton and Lange, 1988
78	Postoperative pain management	Shorten	BI Publications Pvt. Ltd.
79	Airway management in the critically ill	Vukmir	BI Publications Pvt. Ltd.
80	Textbook of intravenous anaesthesia	White	BI Publications Pvt. Ltd.
81	Anaesthesia Equipments.	Wards Davey ,	Bailliro Tindall
82	Outpatient Anesthesia	White PF, et al	Churchill Livingston
83	Ambulatory Anesthesia and Surgery	White PF, et al	Saunders 1997
84	Yao and Artusio's Anesthesiology: Problem-Oriented Patient Management	Yao FSF, et al	Lippincott Williams and Wilkins
85	Anaesthesia and Intensive care A-Z	Yentis	BI Publications Pvt. Ltd.

VIII. Recommended Journals (the following list is not exhaustive. Addition and deletion will be done as need arises)

S. No.	Name of the journal
1	Anaesthesia
2	Journal of Anesthesiology Clinical Pharmacology
3	Anesthesia and Analgesia
4	Anesthesiology
5	Indian Journal of Anaesthesia
6	Canadian Journal of Anaesthesia
7	British Journal of Anaesthesia
8	Acta Anaesthesiologica Scandinavica
9	Current Opinion in Anesthesiology
10	European Journal of Anesthesiology
11	International Anaesthesiology Clinics
12	Journal of Clinical Monitoring and Computing
13	Journal of Intensive Care Medicine
14	Journal of Neurosurgical Anaesthesiology
15	Pediatric Anaesthesia
16	Anaesthesiologic Clinics of North America

- 17 Asian Archives of Anaesthesiology and Resuscitation
- 18 Indian Journal of Critical Care Medicine
- 19 Annals of Emergency Medicine
- 20 Journal of Trauma-Injury Infection and Critical Care
- 21 The Pain Clinic
- 22 Pain Medicine
- 23 Critical Care Medicine

SECTION - II

Post Graduate Diploma Courses in Anesthesia (DA)

Goal:

The postgraduate course, D.A (Anaesthesiology) should enable a medical graduate to become a competent specialist, acquire knowledge and skills in educational technology for teaching medical, dental and health sciences and conduct research in bio-medical science.

The DA course in anaesthesiology is a two year integrated course after satisfactory completion of the course the candidate shall be fully conversant with theory and practical aspects of anaesthesiology and able to practice anaesthesiology completely, confidently and safely in the community that he/she serves.

Objectives

- 7) 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.
- 8) Who shall have mastered most of the competencies, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.
- 9) Who shall be aware of the contemporary advances and developments in anaesthesiology.
- 10) Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology:
- 11) Continue to evince keen interest in learning and teaching Anaesthesiology whether he is in a teaching institution or is a practicing anaesthesiologist.

Specific Learning Objectives:

The specific learning objectives of postgraduate training course in Anaesthesiology would be to train a MBBS doctor who will:

- 1 .Practice independently the art and science of anaesthesiology, backed by scientific knowledge and skill based approach.
- 2.Undertake responsibilities in critical care, trauma, and respiratory therapy and resuscitation of unconscious patients.
3. Become skilled in acute and chronic pain management.
4. Exercise empathy and a caring attitude and maintain high ethical standards.
5. Be a motivated' teacher'- defined as an Anaesthesiologist keen to share his knowledge and skills with a colleague or a junior or any learner.

The objectives may be considered under the following headings.

- E. Knowledge
- F. Skills
- G. Human values, ethical practice and communication abilities

H. Research activities.

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

E. Knowledge:

- Demonstrate understanding of basic sciences relevant to anaesthesia.
- Describe the anaesthetic management of common and uncommon surgical ailments belonging to various branches of surgery, of all ages, requiring operative interventions with a basic knowledge of the aetiology, pathophysiology and the surgical treatment of the conditions.
- Describe the underlying theoretical background of mechanism of pain, pain perception and pain management.
- Describe the theory of the underlying aetiology, mechanism and management of the conditions requiring resuscitation.
- Demonstrate understanding of the theoretical basis of polytrauma and the science of resuscitation.
- Recognize the conditions that may be outside the area of his competence and refer them to an appropriate specialist prior to anesthetizing them.
- Update himself/herself by self-study and by attending continuing medical education courses, conferences and seminars relevant to anaesthesia.
- Demonstrate understanding of medico-legal aspects of anaesthesia.
- Describe anaesthesia for laser surgeries
- Describe outpatient anaesthesia and anaesthesia at high altitudes.

B. Skills: Practical / Clinical

- Perform 'pre-anaesthetic evaluation' of patients undergoing surgery by taking, proper clinical history, examining the patient, ordering relevant investigations and interpreting them to have additional information about the surgical condition, and / or the associated medical condition, which warrant the modification of the proposed anaesthetic management.
- Administer anaesthesia (general and or regional) to common surgical operations independently and to allied specializations like cardiac surgery, neurosurgery.
- Provide Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS).
- Manage airway and perform ventilatory care of unconscious and polytrauma cases as a member of trauma team and critical care unit team.
- Undertake complete clinical monitoring of the patients during preoperative, intraoperative & postoperative periods and also of the patients who are on ventilators in ICU & CCU.
- Perform acute and chronic pain management.

C. Human values, ethical practice and communication abilities

- Adopt ethical principles in all aspects of anaesthetic practice. Professional honesty and integrity are to be fostered. Anaesthesia care is to be delivered to all in need, irrespective of the social status, caste, creed or religion of the patient.

- Develop communication skills, in particular the skill to explain the various options available in the anaesthetic management, critical care, pain management and to obtain written informed consent from the patient.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- Respect patient's rights and privileges including patients right to information and right to seek a second opinion.

III. COURSE CONTENTS:

Theory

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, Anatomy, Physiology, Pharmacology. It is intended as a guide to the candidates and it is not comprehensive. As and when there is a newer development, it becomes eligible for inclusion. Hence, the candidates should be familiar themselves with the current content of the scientific journals and reviews of major topics in Anaesthesia.

9. History of Anaesthesiology.
10. Basic Sciences related to Anaesthesia including Anatomy, Physiology, Pharmacology, Biochemistry.
11. Medicine applied to Anaesthesiology.
12. Physics related to Anaesthesiology, Electronics, Computers and Lasers in Anaesthesiology. Internet / Medline and its uses and applications.
13. Anaesthesiology.
 - x. Pre anaesthetic evaluation and preparation.
 - xi. Principles and Practice of Anaesthesiology including pre-operative , peroperative and post operative care of patients belonging to General Surgery, Obstetrics and Gynecology, ENT, Ophthalmology, Orthopedics, and other superspecialities like Cardio thoracic Surgery, Neurosurgery, Plastic Surgery and Surgical Endocrinology, Surgical Oncology, Pediatric, Urology, Dental Surgery, Laparoscopic Surgery, Organ transplantation etc.
 - xii. Blood transfusion-Fluid and Electrolyte balance, - Acid Base Balance.
 - xiii. Different methods of anaesthetic techniques.
 - xiv. Regional anaesthesia including spinal, epidural anaesthesia and caudal block, brachial Plexus block.
 - xv. Local Anaesthesia including peripheral nerve blocks and sympathetic nerve block.
 - xvi. Complication in Anaesthesiology and their management both pre operatively and post operatively.
 - xvii. Fires and Explosion in operation theatre.
 - xviii. Operation Theatre sterilization procedures.
14. Pain Clinic organization and management. Pain pathway and management of acute and chronic pain.
15. Respiratory therapy and management of both acute and chronic respiratory insufficiencies and ventilator commitments in intensive care unit, surgical intensive care unit, medical intensive care unit, neuro surgical intensive care unit and trauma care.
16. Critical Care Anaesthesiology and Trauma Care Unit and Resuscitation.

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

Technical Skills to be Acquired:

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

Skills may be considered under the following headings:

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

1) Basic Graduate Skills:

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

Basic Graduate Skills	Category	Year	No.
Recording of vital signs.	PI	I	200
Insertion of intravenous lines	PI	I	100
Insertion of nasogastric tubes	PI	I	25

2) Anaesthesia Procedures:

Airway insertion

Oropharyngeal	PI	I/II	100/100
Nasopharyngeal	PI	I/II	25/25

Intubation

Orotracheal intubation	PI	I/II	50/100
Nasotracheal Intubation	PI	I/II	25/50
Endobronchial			
(Double lumen tube)	O	II	05
Retrograde intubation	O	II	02
Fiber optic intubation	O	II	02

LMA

LMA insertion	PI	I/II	25/25
Intubating LMA	O	II	02
Subarachnoid block	PI	I/II	50/100
Epidural block	PI	I/II	15/50
Caudal block	PI	I/II	05/05
Brachial plexus block	PI	II	05
Wrist block	PI	II	02
Ankle block	PI	II	02
Popliteal block	PI	II	02
Intercostal nerve block	PI	II	02
Intravenous regional analgesia	PI	II	05
Three in one block	O	II	02
Rectus sheath block	O	II	02
Hernia block	PI	II	05
Major anaesthesia procedures	PI	I/II	50/150
Minor anaesthesia procedures	PI	I/II	50/150

3) Critical Care Procedures:

Insertion of arterial lines	PI	II	02
Insertion of central venous lines	PI	II	05
Intercostal drainage	O	II	05
Tracheostomy	O	II	05
Ventilatory management of patients	PI	II	10
Sampling for and interpretation of ABG	PI	II	05
Correction of electrolyte imbalance	PI	II	10

Fiber-Optic Bronchoscopy	O	II	05
Cricothyrotomy	O	II	05
Insertion of pulmonary artery catheter	O	II	05
4) Emergency Room Procedures:			
Management of airway obstruction	PI	II	20
Management of shock	PI	II	20
Management of respiratory failure	PI	II	05
Cardio Pulmonary Resuscitation (BLS)	PI	II	05
Advanced Cardiac Life Support (ACLS)	PI	II	05
5) Pain Alleviation Procedures:			
Pain management			
Post Anesthesia Care Unit (PACU)	PI	I/II	50/100
Post operative wards	PI	I/II	50/100
Labour analgesia	PI	II	50
Under radiographic guidance			
Stellate ganglion block	PA	II	02
Coeliac ganglion block	PA	II	02
Trigeminal nerve block	O	II	02
Neurolysis and other nerve ablation procedures	O	II	05
Ultrasound guided nerve block	O	II	05
6) Special Monitoring Techniques			
Bi-Spectral Index (BIS)	O	II	05
Nerve stimulator	O	II	05
Invasive Blood Pressure monitoring (IBP)	O	II	05
Pulmonary Artery Pressure monitoring (PAP)	O	II	05
Central Venous Pressure monitoring (CVP)	O	II	05
Trans Esophageal Echocardiography (TEE)	O	II	05

Year-wise Structured Training Schedule

First Year:

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

- Computers in Anaesthesia, Medline, Internet.
 - Bio Statistics.
 - Medical Audit.
 - Medico-legal aspects.
 - Research Methodology.
 - Evidence Based Medicine.
 - Medical Ethics and Social responsibilities of anesthesiologists
4. Anaesthesia Skills
- Pre anaesthetic evaluation / under supervision.
 - Monitoring of patients through out perioperative period. Becomes skilled in using and interpreting the following routine noninvasive monitors intra operatively
 - Electro Cardiography (ECG) with ST segment analysis
 - Noninvasive blood pressure monitoring (NIBP)
 - Capnograph: values and changes in waveform
 - Pulse-oximetry: values and changes in waveform
 - Neuromuscular blockade monitor
 - Central Venous Pressure, values and waveform
 - Assisting setting up of anaesthesia machine, monitor and ventilator.
 - Assisting the conduct of anaesthesia for major surgeries; knowledge about the complications of anaesthesia.
 - Assisting for short anaesthesia initially and later on doing independently under supervision
 - Conduct of anaesthesia Out Patient Department (OPD).
 - Cardio Pulmonary Resuscitation (CPR) training and mastering of Basic Life support (BLS) and Advanced Cardiac Life Support (ACLS).

Second Year:

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

2. The student must get expertise in the specialized procedures as noted in the course content table.

Teaching and Learning Activities

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

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

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

1. **Lectures** : Lectures are to be kept to a minimum. They may, however, be employed for teaching certain topics. Lectures may be didactic or integrated.
 - a) **Didactic Lectures**: Recommended for selected common topics for postgraduate students of all the specialities. Few topics are suggested as examples:
 - 1) Applied anatomy, applied physiology.
 - 2) Initial introductory lectures about anesthesia subject.
 - 3) Use of library
 - 4) Medical code of conduct and medical ethics.
 - 5) National health and disease control programs.
 - 6) Communication skills etc.These topics may preferably taken up in the first few weeks of the 1st year.
 - b) **Integrated Lectures**: These are recommended to be taken by multidisciplinary teams for selected topics, e.g. Applied Anatomy, Applied Physiology, etc.
2. **Journal Club**: All the PG students are expected to attend and actively participate in discussion and enter in the logbook relevant details.
3. **Subject seminar**: Recommended to be held as for the norms of MCI rules. All the PG students are expected to attend and actively participate in discussion and enter in the logbook relevant details. The presentations would be evaluated using checklists and would carry weightage for internal assessment. A time table for the subject with names of the student and the moderator should be scheduled at the beginning of the every term.
4. **Student Symposium**: Recommended as an optional multi-disciplinary programme. The evaluation may be similar to that described for subject seminar.
5. **Ward Rounds**: May be service rounds or teaching rounds.
 - a) **Service Rounds**: Postgraduate students should do ward rounds every day.
 - i) for pre anaesthetic evaluation of the patients posted for operation.
 - ii) and to do the post anaesthetic follow up of operated patients for alleviation of post-operative pain and for diagnosis and management if any of the post-operative anaesthesia complications.
 - b) **Teaching Rounds**: Every unit should have grand round for teaching clinical methods and pre anaesthetic evaluation.
Entries of (a) and (b) should be made in the logbook.

6. **Critical Incident meetings** – These are held every month in the department. Morbidity and mortality meeting will be held as and when need arises in association with concerned departments. Presentation is done by rotation and by the students who had conducted/assisted anaesthetic management.
7. **Inter Departmental Meetings(Integrated Programmes-vertical & Horizontal):** Strongly recommended particularly with departments of surgery and medicine at least once in three months. These meetings should be attended by postgraduate students and relevant entries must be made in the logbook

8 Internal evaluation

During the course of two years, the department will conduct two tests. One of them will , one at the end of first year and other one three months before the final examination. The test may include written papers, practicals / clinicals and viva voce. Objective structured clinical evaluation shall be included in the second periodical test. Records and marks obtained in such tests will be maintained by the head of the department and will be sent to the University when called for.

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

9.Continuing Medical Education Programmes (CME): At least one state / national level CME programs should be attended by each student in 2 years.

10.Conferences: Attending conferences is optional. However, participation and presentation of scientific paper should be encouraged.

11.Scientific research society Meetings : Attending SRS meetings and actively participating in them.

12.Pro & Con - There will be one “Pro & Con” session per month where in controversial topics are taken up by the Post Graduate students for discussion.

13.How I do it?- An interesting and intriguing hypothetical clinical scenario is taken up for discussion , once in a month .

Rotation and Posting in other Departments

The listed knowledge and skills are to be learnt over a period of 2 years. The process is a continuous one. However, the recommended period and timing of training in basic sciences, allied departments and speciality departments are given below. The total duration of postings in allied and subspecialties will be 6 months and the remaining 1 year and 6 months in the mother department.

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

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

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

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

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

Other Subspecialties of Anaesthesia:

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

Cardiothoracic surgery, Cardiac Cath Lab	--	3 weeks
Neuro surgery	--	3 weeks
Paediatric surgery	--	2 weeks
Cancer surgery	--	2 weeks
Oromaxillary surgery	--	2 weeks
Plastic surgery	--	2 weeks
Urology	--	2 weeks
Casualty posting	--	2 weeks
Anaesthesia for investigative procedure like CT & MRI Scan, Lithotripsy.	--	2 weeks

		20 weeks

Monitoring Progress of Studies

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

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

i) **Personal Attitudes.** The essential items are:

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

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

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

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

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

- iii) **Clinical skills:**

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

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

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

- iv) Periodic tests: The departments may conduct two tests, one of them be at the end of first year and the other in the second year three months before the final examination. The tests may include written papers, practicals / clinicals objective structured clinical evaluation and viva voce.
- v) Work diary / Log Book- Every candidate shall maintain a work diary and record his/her participation in the training programs conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.
- vi) Records: Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.

Log book

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

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

Procedure for defaulters

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

Scheme of Examination

A) Theory:

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

Paper I - Basic Science as applicable to Anaesthesia.

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

Paper II - Clinical Practice of Anaesthesia.

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

Paper III - Clinical Practice of Anaesthesia.

1. ENT
2. Endocrines.
3. Geriatrics

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

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

B) Clinical Examination: 150 marks

It should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine and present at least one long case (carrying 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;

For examination of all components of syllabus.....50 marks

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

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

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

Recommended Books and Journals

Books:

S.NO.	Name of the Book	Name of the author	Publisher
1	A Synopsis of Anaesthesia	Atkinson RS, Rushman GB and Lee J.	Wright - PSG
2	Textbook of Anaesthesia	Aitkenhead AR et al	Churchill-Livingstone
3	Complications in Anaesthesia	Aflee	BI Publications Pvt. Ltd. 2006
4	Clinical Anaesthesia	Aitkenhead AR et al	Churchill Livingstone 1995

5	Textbook of Anaesthesia	Aitekhead et al 5/e	BI Publications Pvt. Ltd. 2007
6	Clinical Data Interpretation in anaesthesia and intensive care	Bonner	BI Publications Pvt Ltd. 2002
7	Anaesthesia Viva 2	Blunt 2/e	BI Publications Pvt. Ltd. 2005
8	Obstetric and Gynecologic Anaesthesia	Braveman	BI Publications Pvt Ltd.
9	Atlas of Regional Anaesthesia	Brown	BI Publications Pvt Ltd.
10	Essential Anatomy for Anesthesia	Black SM, et al.	Churchill-Livingstone
11	TEE Pocket Manual	Butterworth	BI Publications Pvt. Ltd.
12	Manual of Orthopedic Anesthesia and Related Pain Syndromes	Bernstein RL, et al	Churchill Livingstone
13	Management of Pain	Bonica JJ, et al	Lea and Febiger
14	Clinical Anesthesia	Barash PG, et al, eds.	Lippincott Williams and Wilkins
15	Perioperative care in cardiac anaesthesia	Cheng	BI Publications Pvt Ltd.
16	Cancer Pain	Casasola	BI Publications Pvt Ltd., 2006
17	Principles of Anesthesiology	Collins VJ, et al	Lea and Febiger
18	Trauma Anesthesia and Intensive Care	Capan LM, et al	Lippincott
19	Peripheral nerve blocks	Chelly	BI Publications Pvt Ltd.
20	Campanion to Clinical Anaesthesia exams 2/e	Corke	BI Publications Pvt. Ltd., 2006
21	Clinical Neuroanaesthesia	Cucci	BI Publications Pvt. Ltd.
22	Physiologic and Pharmacologic Basis of Anesthesia	Collins VJ, et al	Williams and Wilkins
23	Clinical Neuroanaesthesia 2/e	Cucchiara	Churchill Livingstone 1997
24	Basic Physics and Measurements in Anaesthesia	Davis PD, et al.	BI Publications Pvt. Ltd.
25	Quick reference to critical care 3/e	Diepenbrock	BI Publications Pvt. Ltd, 2007
26	Regional Anaesthesia and Pain management	Dureja	BI Publications Pvt. Ltd.
27	Synopsis of Anaesthesia 13/e	Davies Lee	BI Publications Pvt Ltd, 2006
28	Understanding Anesthesia Equipment	Dorsch JA, et al	Williams and Wilkins
29	Anaesthesia Secrets 3/e	Duke	BI Publications Pvt Ltd, 2006
30	Clinical Anaesthesia Procedures of the Massachusetts general Hospital 7/e	Dunn	BI Publications Pvt Ltd 2007
31	Intravenous Anaesthesia 2/e	Dundee JW, et al.,	Churchill Livingstone, 1988
32	Ward's Anaesthetic Equipment, 3/e	Davey A et al,	Saunders, 1992
33	Anatomy for Anesthetists, 8/e	Ellis H, et al.,	BI Publications Pvt. Ltd 2005

34	Anaesthesia and uncommon diseases	Fleisher	BI Publications Pvt. Ltd
35	Pharmacology for anesthesiologists	Fee	BI Publications Pvt. Ltd.
36	Blue prints Pocket: Anaesthesiology	Gaiser	BI Publications Pvt. Ltd.
37	Trauma & Orthopedic Anaesthesia	Geraldine	BI Publications Pvt. Ltd.
38	Paediatric Anesthesia	Gregory GA, et al.,	Churchill Livingstone, 2001
39	Ophthalmic Anesthesia	Gills JP, et al	Slack
40	Physiology of Spinal Anesthesia	Greene NM, et al	Williams and Wilkins
41	Benamol's Airway Management	Hagberg	BI Publications Pvt. Ltd.
42	Wylie and CI Davidson's practice of Anaesthesia	Healey	BI Publications Pvt. Ltd.
43	Foundations of Anaesthesia	Hugh Hemmings	BI Publications Pvt. Ltd.
44	Understanding Pediatric Anaesthesia	Jacob	BI Publications Pvt. Ltd.
45	Anesthesiologist's Manual of Surgery Procedures, 3/e	Jaffie	BI Publications Pvt. Ltd.
46	Vascular Anaesthesia	Kaplan	BI Publications Pvt. Ltd.
47	Kaplan's Cardiac Anaesthesia	Kaplan	BI Publications Pvt. Ltd.
48	Clinical Applications of Ventilatory Support	Kirby RR, et al	Churchill Livingstone
49	Pediatric Cardiac Anaesthesia	Lake	BI Publications Pvt. Ltd.
50	Understanding pain for better clinical practice	Linton	BI Publications Pvt. Ltd.
51	Manual of overdoses and poisoning	Linden	BI Publications Pvt. Ltd.
52	Smith Anaesthesia Infant and children	Motoyama	BI Publications Pvt. Ltd.
53	Chronic pain: A primary care guide to practical management	Marcus	BI Publications Pvt. Ltd.
54	Clinical Anesthesiology	Morgan GE,et al	Lange
55	Anesthesia	Miller RD, et al	Churchill Livingstone
56	Physics for the Anesthetist	Mushin WW, et al	Blackwell
57	Critical care Medicine, 3/e	Marian	BI Publications Pvt. Ltd.
58	The ICU Book, 3/e	Marino	BI Publications Pvt. Ltd.
59	Wall & Melzacks textbook of pain	Mcmahon	BI Publications Pvt. Ltd.
60	Critical Care Nursing, 8/e	Morton	BI Publications Pvt. Ltd.
61	Decision making in pain management, 2/e	Ramamurthy	BI Publications Pvt. Ltd.
62	Atlas of image guide interventional regional	Rathmel	BI Publications Pvt. Ltd.
63	Clinical cases in Anaesthesia, 3/e	Reed	BI Publications Pvt. Ltd.
64	Anesthetic Facial Plastic Surgery	Romo	BI Publications Pvt. Ltd.
65	Management of common medical conditions, An issue of Anaesthesiology clinics	Rosenbaum	BI Publications Pvt. Ltd.
66	Pediatric Critical Care Medicine	Slonim	BI Publications Pvt. Ltd.
67	ACLS Review made incredibly easy	Springhouse	BI Publications Pvt. Ltd.
68	Respiratory care made incredibly easy	Springhouse	BI Publications Pvt. Ltd.
69	Text book of Anaesthesia, 2/e	Smith G and Aitkenhead	Churchill Livingstone, 1990

70	Ambulatory anaesthesia	Springman	BI Publications Pvt. Ltd.
71	Anesthesia and Co-Existing Disease	Stoelting RK, et al	BI Publications Pvt. Ltd.
72	Monitoring in Anesthesia	Saidman LJ, et al	Butterworth
73	Basics of Anesthesia	Stoelting RK	BI Publications Pvt. Ltd
74	Anesthesia for Infants and Children	Smith RM	C.V. Mosby-Year Book
75	Pharmacology and Physiology in Anesthetic Practice	Stoelting RK	Lippincott
76	Trauma Anesthesia	Stene J K, et al,	Williams & Wilkins, 1990
77	Clinical Anatomy for Anaesthesiologists	Snell RS, et al,	Appleton and Lange, 1988
78	Postoperative pain management	Shorten	BI Publications Pvt. Ltd.
79	Airway management in the critically ill	Vukmir	BI Publications Pvt. Ltd.
80	Textbook of intravenous anaesthesia	White	BI Publications Pvt. Ltd.
81	Anaesthesia Equipments.	Wards Davey ,	Bailliro Tindall
82	Outpatient Anesthesia	White PF, et al	Churchill Livingston
83	Ambulatory Anesthesia and Surgery	White PF, et al	Saunders 1997
84	Yao and Artusio's Anesthesiology: Problem-Oriented Patient Management	Yao FSF, et al	Lippincott Williams and Wilkins
85	Anaesthesia and Intensive care A-Z	Yentis	BI Publications Pvt. Ltd.

Journals

Anaesthesia

Journal of Anesthesiology Clinical Pharmacology

Anesthesia & Analgesia

Anesthesiology

Indian Journal of Anaesthesia

Canadian Journal of Anaesthesia

British Journal of Anaesthesia

Acta Anaesthesiologica Scandinavica

Current Opinion in Anesthesiology

European Journal of Anesthesiology

International Anaesthesiology Clinics

Journal of Clinical Monitoring & Computing

Journal of Intensive Care Medicine

Journal of Neurosurgical Anaesthesiology

Pediatric Anaesthesia

Anaesthesiology Clinics of North America

Asian Archives of Anaesthesiology and Resuscitation

Indian Journal of Critical Care Medicine

Annals of Emergency Medicine

Journal of Trauma-Injury Infection & Critical Care

The Pain Clinic

Pain Medicine

Critical Care Medicine

SECTION - III

MEDICAL ETHICS

Sensitization and Practice

Introduction

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

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 0
 - 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 Behavior 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 cares
 - Malpractice and Negligence

8. Research Ethics
 - Animal and experimental research / humanness
 - Human experimentation
 - Human volunteer research – Informed Consent
 - Drug trials\
 - ICMR Guidelines for Ethical Conduct of Research – Human and Animal
 - ICH / GCP Guidelines
 - Schedule Y of the Drugs and Cosmetics Act.

9. Ethical work -up of cases
 - Gathering all scientific factors
 - Gathering all human factors
 - Gathering value factors
 - Identifying areas of value – conflict, setting of priorities,
 - Working our criteria towards decisions

Additional reading

1. Compendium of Recommendations of Various committees on Health and Development (1943-1975)
DGHS, 1985 Central Bureau of Health Intelligence, Directorate General of Health Services, Min. Of Health and Family Welfare, Govt. of India, Nariman Bhawan New-Delhi, P-335
2. National Health Policy: Min. of Health & Family Welfare, Nirman Bhawan, New Delhi, 1983
3. Santosh Kumar: The elements of Research, writing and editing 1994, Dept. of Urology, JIPMER, Pondicherry.
4. Srinivasa D K et al : Medical Education Principles and Practice, 1995. National Teacher Training Centre, JIPMER, Pondicherry.
5. Ethical guidelines for biomedical research on human participants
I.C.M.R. New Delhi 2006.
6. Code of Medical Ethics framed under Section 33 of the Indian Medical Council Act, 1956. Medical Council of India, Kotla Road, New Delhi.
7. Francis C.M: Medical Ethics, Jaypee Publications, Bangalore, 2nd Edn-2004.
8. Indian National Science Academy, Guidelines for care and use of animals in Scientific Research, New Delhi, 1994.
9. International Committee of Medical Journal Editors, Uniform requirements for manuscripts submitted to biomedical journals, N England Journal of Medicine. 1991, 424-8
10. Kirkwood B.R. Essentials of Medical Statistics, 1st Ed. Oxford, Blackwell Scientific Publications 1988.

11.Mahajan B.K.: Methods in Bio-statistics for Medical students,5th Edition new Delhi, Jaypee Brothers Medical Publishers,1989.

12.K.R.Sundaram,S.N.Dwivedi,V.Srinivas.Medical Statistics.Principles & Methods .B.I.Publications,New Delhi,2010

13.R.K.Chaube: Consumer Protection Act and Medical Profession, 1st Edition, 1999,Jaypee Brothers.

SECTION IV

ANNEXURES

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 1	Average 2	Good 3	Excellent 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:

Sl. No	Items for observation during presentation	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.	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 Unit Head:

Date:

Sl. No.	Points to be considered	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.	Bedside manners				
8.	Rapport with patients				
9.	Counseling patient's relatives for blood donation or Postmortem and Case follow up.				
10.	Over all quality of Ward work				
	Total Score				

Check List – IV

EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the Student:

Name of the Faculty:

Date:

Sl. No	Points to be considered	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				
	▪ 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

Sl. 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 sequences 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 SYNOPSIS PRESENTATION

Name of the Student:

Name of the Faculty:

Date:

Sl. No	Points to be considered	Poor	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 presentation	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				

Table 1: Academic activities attended

Name:

Admission Year:

College:

Date	Type of Activity Specify Seminar, Journal Club, Presentation, UG teaching	Particulars

Table 2

Details of participation in teaching programs

Sl. No.	Date	Type/ Topic	Marks / Grade Obtained	Signature

TABLE 3

Anaesthetic Techniques Performed

Date	Name and IP No.	Surgery Performed	Type of Anaesthesia with details

Model Overall Assessment Sheet

Name of the College:

Academic Year:

Sl. 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											

Note: Use separate sheet for each year.


REGISTRAR
BLDE (Deemed to be University)
Vijayapura-586103. Karnataka