

Faculty of Medicine



JSS Academy of Higher Education & Research

(Deemed to be University)

Accredited "A" Grade by NAAC

Sri Shivarathreshwara Nagar, Mysuru – 570 015

Regulation & Syllabus

Post Graduate Degree Programs
EMERGENCY MEDICINE 2016

MD

Regulation & Syllabus

MD EMERGENCY MEDICINE

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REGULATION AND SYLLABUS FOR POST GRADUATE DEGREE PROGRAMS 2016

MD EMERGENCY MEDICINE



CONTENTS

		Page No
Chapter I	Regulation	04
Chapter II	Goals and General Objectives	11
Chapter III	Monitoring Learning Process	13
Chapter IV	Ethics	26
Chapter V	Syllabus - Degree	28

CHAPTER I

REGULATION FOR POST GRADUATE DEGREE AND DIPLOMA COURSES

1. Branch of study

Post graduate degree courses

Doctor of Medicine

- a) Anaesthesiology
- b) Anatomy
- c) Biochemistry
- d) Community medicine
- e) Dermatology, venereology and leprosy
- f) Emergency medicine
- g) Forensic medicine
- h) General medicine
- i) Hospital administration
- j) Microbiology
- k) Pathology
- l) Paediatrics
- m) Pharmacology
- n) Physiology
- o) Psychiatry
- p) Tuberculosis and Respiratory Medicine
- q) Radio Diagnosis

Master of Surgery

- a) General surgery
- b) Obstetrics and gynaecology
- c) Ophthalmology
- d) Orthopaedics
- e) Otorhinolaryngology

Post graduate diploma courses

- a) Anaesthesiology (DA)
- b) Child Health (DCH)
- c) Clinical Pathology (DCP)
- d) Dermatology, Venereology & Leprosy (DDVL)
- e) Medical Radio Diagnosis (DMRD)
- f) Obstetrics & Gynaecology (DGO)
- g) Ophthalmology (DO)
- h) Orthopaedics (D Ortho)
- i) Otolaryngology (DLO)
- j) Psychiatric Medicine (DPM)

2. Eligibility for admission

MD / MS Degree and Diploma courses: A candidate who has passed final year MBBS examination after pursuing a study in a medical college recognized by the Medical Council of India and has completed one year compulsory rotating internship in a teaching institution or other institution recognized by the Medical Council of India, and has obtained permanent registration of any State Medical Council, shall be eligible for admission.

3. Admission

A candidate desirous of admission to Post Graduate Medical Programmes MD/MS / PG Diploma Courses is required to complete the application form and submit to the Deemed to be University along with prescribed documents on or before the scheduled date. Eligibility criteria, application form and details of documents to be submitted are available in the Deemed to be University website: www.jssuni.edu.in.

4. Registration

A candidate who has been admitted to postgraduate course shall register in the Deemed to be University within a month of admission after paying the registration fee.

5. Intake of students

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

6. Duration of study

MD, MS Degree Courses: The course of study shall be 3 completed years including the period of examination.

Provided that in case of students having a recognized 2 years postgraduate diploma course in the same subject, the period of training including the period of examination shall be 2 years.

Diploma courses: The course of study shall be 2 completed years including the examination period.

7. Methodology of training

The training of postgraduate for degree/diploma shall be residency pattern, with graded responsibilities in the management and treatment of patients entrusted to his/her care. The participation of the students in all facets of educational process is essential. Every candidate should take part in seminars, group discussions, grand rounds, case demonstration, clinics, journal review meetings, CPC and clinical meetings. Every candidate shall participate in the teaching and training programme of undergraduate students. Training should include involvement in laboratory and experimental work, and research studies. Basic medical sciences students should be posted to allied and relevant clinical departments or institutions. Similarly, clinical subjects' students should be posted to basic medical sciences and allied specialty departments or institutions.

8. Attendance, progress and conduct

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

clinic/laboratory while studying postgraduate course.

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. 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.

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

9. Monitoring progress of study

Work diary / Log Book: Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention shall 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 Deemed to be University practical/clinical examination.

Periodic tests: In case of degree courses of three years duration (MD/MS), the concerned departments shall conduct three tests, two of them be annual tests, one at the end of first year and the other at the end of the second year. The third test shall be held three months before the final examination. The tests shall include written papers, practical / clinical and viva voce. Records and marks obtained in such tests shall be maintained by the Head of the Department and sent to the Deemed to be University, when called for.

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

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

10. Dissertation

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

The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.

Every candidate shall submit to the Controller of Examinations of the Deemed to be 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 Deemed to be University. The synopsis shall be sent through proper channel.

Such synopsis will be reviewed and the dissertation topic will be registered by the Deemed to be University. No change in the dissertation topic or guide shall be made without prior approval of the Deemed to be University.

The dissertation should be written under the following headings:

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

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 Deemed to be University.

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

Guide: The academic qualification and teaching experience required for recognition as a guide for dissertation work is as per MCI Minimum Qualifications for Teachers in Postgraduate Medical Education Regulations, 2000. Teachers in a medical college/institution having a total of eight years teaching experience out of which at least five years teaching experience as Assistant Professor gained after obtaining post graduate degree shall be recognised as post graduate teachers.

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

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 Deemed to be University.

A postgraduate student is required to present one poster presentation, to read one paper at a 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 eligible to appear at the postgraduate degree examination.

11. Schedule of examination

The examination for MD / MS courses shall be held at the end of three academic years (six academic terms). The examination for the diploma courses shall be held at the end of two academic years.

For students who have already passed Post Graduate Diploma and appearing for MD examination, the examination shall be conducted after two academic years including submission of dissertation. The Deemed to be 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.

12. Scheme of examination

MD/MS

Dissertation: Every candidate shall carry out work and submit a dissertation as indicated in Sl. No. 10. Acceptance of dissertation shall be a precondition for the candidate to appear for the final examination.

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

Pattern of Theory Examination Question Paper:

Each paper shall consist of two long essay questions each carrying 20 marks, 3 short essay questions each carrying 10 marks and 6 short answer questions each carrying 5 marks. Total marks for each paper shall be 100.

Practical/Clinical Examination: In case of Practical examination for the subjects in Basic Medical Sciences Practical Examination shall be conducted to test the knowledge and competence of the candidates for making valid and relevant observations based on the experimental/Laboratory studies and his ability to perform such studies as are relevant to his subject.

Clinical examination for the subjects in Clinical Sciences shall be conducted to test the knowledge and competence of the candidates for undertaking independent work as a specialist/Teacher, for which candidates shall examine a minimum one long case and two short cases.

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

Viva Voce: Viva Voce shall be thorough and shall aim at assessing the candidate knowledge and competence about the subject, investigative procedures, therapeutic technique and other aspects of the speciality, which form a part of the examination.

The total marks shall be 100 and the distribution of marks shall be as under:

- | | | |
|-----|-----------------------------------------------|----|
| i) | For examination of all components of syllabus | 80 |
| ii) | For Pedagogy | 20 |

If there is skills evaluation, 10 marks shall be reserved for Pedagogy and 10 marks for skill evaluation.

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 Deemed to be University Examination:

A candidate shall pass theory and practical including clinical and viva-voce examination separately and shall obtain 40% marks in each theory paper and not less than 50% marks cumulatively in all the four papers for post graduate degree examination to be declared as pass.

A candidate obtaining less than 40% marks in any paper and obtaining less than 50% of marks cumulatively in all the four papers for postgraduate degree examination 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 class: A successful candidate passing the Deemed to be University examination in first attempt and secures grand total aggregate 75% of marks or more will be declared to have passed the examination with distinction, 65% but below 75% declared as First Class and 50% but below 65% declared as Second Class.

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

Post Graduate Diploma Examinations

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 shall also be asked.

Pattern of Theory Examination Question Paper:

Each paper shall consist of two long essay questions each carrying 20 marks, 3 short essay questions each carrying 10 marks and 6 short answer questions each carrying 5 marks. Total marks for each paper shall be 100.

Practical Clinical Examination: In case of practical examination it shall 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 shall aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate shall 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 shall be thorough and shall aim at assessing the candidate's knowledge and competence about the subject, investigative procedures, therapeutic technique and other aspects of the speciality, which shall form a part of the examination. The total marks shall be 50.

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 Deemed to be University Examination:

A candidate shall pass theory and practical including clinical and viva-voce examination separately and shall obtain 40% marks in each theory paper and not less than 50% marks cumulatively in all the three papers for post graduate diploma examination to be declared as pass.

A candidate obtaining less than 40% marks in any paper and obtaining less than 50% of marks cumulatively in all the three papers for post graduate diploma examination 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 class: A successful candidate passing the Deemed to be University examination in first attempt and secures grand total aggregate 75% of marks or more will be declared to have passed the examination with distinction, 65% but below 75% declared as First Class and 50% but below 65% declared as Second Class.

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

13. Number of candidates per day

The maximum number of candidates to be examined in Clinical/ practical and Oral on any day shall not exceed eight for M.D./M.S. degree, eight for diploma.

CHAPTER II

GOALS AND GENERAL OBJECTIVES OF POSTGRADUATE MEDICAL EDUCATION PROGRAM

GOAL

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

1. Who shall recognize the health needs of the community and carry out professional obligations ethically and in keeping with the objectives of the national health policy.
2. Who shall have mastered most of the competencies, pertaining to the specialty, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.
3. Who shall be aware of the contemporary advance and developments in the discipline concerned.
4. Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology and
5. Who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

GENERAL OBJECTIVES

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

1. Recognize the importance to the concerned speciality in the context of the health needs of the community and the national priorities in the health section.
2. Practice the specialist concerned ethically and in step with the principles of primary health care.
3. Demonstrate sufficient understanding of the basic sciences relevant to the concerned specialty.
4. Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive and primitive measure/strategies.
5. Diagnose and manage majority of the conditions in the speciality concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.
6. Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability related to the specialty.
7. Demonstrate skills in documentation of individual case details as well as morbidity and mortality rate relevant to the assigned situation.
8. Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.
9. Play the assigned role in the implementation of national health programme, effectively and responsibly.

10. Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.
11. Develop skills as a self-directed learner, recognize continuing education needs; select and use appropriate learning resources.
12. Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyze relevant published research literature.
13. Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.
14. Function as an effective leader of a health team engaged in health care, research or training.

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

COMPONENTS OF THE POSTGRADUATE CURRICULUM:

The major components of the Postgraduate curriculum shall be:

- Theoretical knowledge
- Practical and clinical skills
- Dissertation skills.
- Attitudes including communication skills.
- Training in Research Methodology, Medical Ethics and Medicolegal aspects.

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

CHAPTER III

Monitoring Learning Progress

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

The learning outcomes to be assessed should include:

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

1. Personal Attitudes: The essential items are:

- a) Caring attitude.
- b) Initiative.
- c) Organisational ability.
- d) Potential to cope with stressful situations and undertake responsibility.
- e) Trustworthiness and reliability.
- f) To understand and communicate intelligibly with patients and others.
- g) To behave in a manner that establishes professional relationships with patients and colleagues.
- h) Ability to work in a team.
- i) A critical enquiring approach to the acquisition of knowledge.

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

2. Acquisition of Knowledge: The methods used comprise of 'Log Book' which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The log book should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities, if so, desired.

- a) **Journal Review Meeting (Journal Club).** The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist (see Model Checklist – I, Chapter III)
- b) **Seminars / Symposia.** The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio- visual aids are to be assessed using a checklist (see Model Checklist-II, Chapter III)

- c) **Clinico-pathological conferences.** This should be a multidisciplinary study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a check list similar to that used for seminar.
- d) **Medical Audit.** Periodic morbidity and mortality meeting shall be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

3. Clinical skills:

- a. **Day to Day work:** Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Chapter III).
 - b. **Clinical meetings:** Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist IV, Chapter III).
 - c. **Clinical and Procedural skills:** The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the log book. (Table No.3, Chapter III).
4. **Teaching skills:** Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See Model checklist V, Chapter III).
 5. **Periodic tests:** In case of degree courses of three years duration, the department may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. In case of diploma courses of two year duration, the departments may conduct two tests. One of them at the end of first year and the other in the second year, three months before the final examination. The tests may include written papers, practical / clinical and viva voce.
 6. **Work diary:** Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.
 7. **Records:** Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the Deemed to be University or MCI.
 8. **Log book:** The log book is a record of the important activities of the candidates during his training. Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate. Format for the log book for the different activities is given in Tables 1, 2 and 3 of Chapter III. Copies may be made and used by the institutions.

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

Format of Model Check Lists

Check List-I

MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Student:

Name of the Faculty/Observer:

Date:

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

Check List – II

MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the Student:

Name of the Faculty/Observer:

Date:

Sl No	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Whether other relevant publications consulted					
2.	Whether cross references have been consulted					
3.	Completeness of Preparation					
4.	Clarity of Presentation					
5.	Understanding of subject					
6.	Ability to answer questions					
7.	Time scheduling					
8.	Appropriate use of Audio-Visual aids					
9.	Overall Performance					
10.	Any other observation					
	Total Score					

Check List - III

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

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

Name of the Student:

Name of the Faculty/Observer:

Date:

SI No	Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations work up					
7.	Beside manners					
8.	Rapport with patients					
9.	Counseling patient's relatives for blood donation or Postmortem and Case follow up.					
10.	Overall quality of ward work					
	Total Score					

Check List - IV
EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the Student:

Name of the Faculty:

Date:

Sl No	Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Completeness of history					
2.	Whether all relevant points elicited					
3.	Clarity of Presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of general physical examination					
7.	Whether all physical signs elicited correctly					
8.	Whether any major signs missed or misinterpreted					
9.	Diagnosis: Whether it follows logically from history and findings					
10.	Investigations required <ul style="list-style-type: none"> • Complete list • Relevant order • Interpretation of investigations 					
11.	Ability to react to questioning Whether it follows logically from history and findings					
12.	Ability to defend diagnosis					
13.	Ability to justify differential diagnosis					
14.	Others					
	Total Score					

Check List - V

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

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

Check List - VI

MODEL CHECK LIST FOR DISSERTATION PRESENTATION

Name of the Student:

Name of the Faculty:

Date:

Sl No	Points to be considered divine	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Interest shown in selecting a topic					
2.	Appropriate review of literature					
3.	Discussion with guide & other faculty					
4.	Quality of Protocol					
5.	Preparation of proforma					
	Total Score					

Check List - VII

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

Name of the Student:

Name of the Faculty:

Date:

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

LOG BOOK

Table 3: Diagnostic and Operative procedures performed

Name:

Admission year:

College:

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

*** Key:**

O - Washed up and observed

A - Assisted a more senior Surgeon

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

Model Overall Assessment Sheet

SI No	Faculty Member & Others	Name of Student and Mean Score*																		
		A	B	C	D	E	F	G	H	I	J									
1.	Journal Review Presentations																			
2.	Seminars																			
3.	Clinical work in wards																			
4.	Clinical presentation																			
5.	Teaching skill practice																			
	Total Score																			

Note: Use separate sheet for each year.

Signature of HOD

Signature of Principal

The above overall assessment sheet used along with the logbook should form the basis for certifying satisfactory completion of course of study, in addition to the attendance requirement.

* KEY:

Mean score : Is the sum of all the scores of checklists 1 to 7.
A, B, Name of the trainees.

Chapter IV

Medical Ethics Sensitisation and Practice

Introduction

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

Course Contents

1. Introduction to Medical Ethics

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

2. Definition of Medical Ethics

- Difference between medical ethics and bio-ethics
- Major Principles of Medical Ethics
 - Beneficence = fraternity
 - Justice = equality
 - Self determination (autonomy) = liberty

3. Perspective of Medical Ethics

- The Hippocratic Oath.
- The Declaration of Helsinki.
- The WHO Declaration of Geneva.
- International code of Medical Ethics. (1993)
- Medical Council of India Code of Ethics.

4. Ethics of the Individual

- The patient as a person.
- The Right to be respected.
- Truth and Confidentiality.
- The autonomy of decision.
- The concept of disease, health and healing.
- The Right to health.
- Ethics of Behaviour modification.
- The Physician – Patient relationship.
- Organ donation.

5. The Ethics of Human life

- What is human life?
- Criteria for distinguishing the human and the non-human.

- Reasons for respecting human life.
- The beginning of human life.
- Conception, contraception.
- Abortion.
- Prenatal sex-determination.
- In vitro fertilization (IVF).
- Artificial Insemination by Husband (AIH).
- Artificial Insemination by Donor (AID).
- Surrogate motherhood.
- Semen Intra-fallopian Transfer (SIFT).
- Gamete Intra-fallopian Transfer (GIFT).
- Zygote Intra-fallopian Transfer (ZIFT).
- Genetic Engineering.

6. The Family and Society in Medical Ethics

- The Ethics of human sexuality.
- Family Planning perspectives.
- Prolongation of life.
- Advanced life directives – The Living Will
- Euthanasia
- Cancer and Terminal Care

7. Profession Ethics

- Code of conduct.
- Contract and confidentiality.
- Charging of fees, Fee-splitting.
- Prescription of drugs.
- Over-investigating the patient.
- Low – Cost drugs, vitamins and tonics.
- Allocation of resources in health care.
- Malpractice and Negligence.

8. Research Ethics

- Animal and experimental research / humaneness.
- Human experimentation.
- Human volunteer research — Informed Consent Drug trials.

9. Ethical workshop of cases

- Gathering all scientific factors.
- Gathering all human factors.
- Gathering all value factors.
- Identifying areas of value — conflict, setting of priorities
- Working out criteria towards decisions.

Recommended Reading

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

Chapter V-Syllabus

M D EMERGENCY MEDICINE

GOALS

The goals of postgraduate training in Emergency Medicine would be to train a basic medical graduate (MBBS)

1. To practice as an Emergency physician equipped with appropriate knowledge and skills necessary for acute care of patients
2. To practice with empathy and the highest ethical standards of the profession.
3. To continue to strive for excellence by continuing medical education throughout his or her professional career.
4. To teach by sharing knowledge and skills with colleagues.
5. To research and find solutions to challenges in health care.

OBJECTIVES

The objectives to be fulfilled at the completion of the course are as follows: At the end of the program, the student should be competent in:

1. PATIENT CARE

- Triage - Emergency Physicians must know the principles of triage which is the process of the allocation and medical prioritization of care for the pre-hospital setting, the Emergency Department and in the event of mass casualties
- Primary assessment and stabilization of life threatening conditions- Emergency Physicians must be able to assess, establish and maintain: Airway [A], Breathing [B], Circulation [C], Disability [D] and Exposure [E] of the patient.
- Focused medical history
- Secondary assessment and immediate clinical management
- Clinical decision making including: re-triage, immediate and/or definitive care provided in the ED, planning for admission or discharge
- Clinical documentation
- Re-evaluation and further management

2. MEDICAL KNOWLEDGE AND CLINICAL SKILLS

Emergency Physicians (Emergency Physicians) need to acquire the knowledge and skills described later and be able to manage all emergencies in an optimal way and as per the standard guidelines

3. COMMUNICATION, COLLABORATION AND INTERPERSONAL SKILLS

Emergency Medicine is practiced in difficult and challenging environments. Effective communication is essential for safe care and for building and maintaining good relationships, avoiding barriers such as emotions, stress and prejudices.

- Emergency Physicians must be able to use both verbal and non-verbal communication skills, as well as information and communication technology. In the case of a patient who is incompetent by virtue of age or mental capacity, communication should be with a parent or other legal representative.
- Emergency Physicians must be able to demonstrate communication and interpersonal skills with regard to patients and relatives, colleagues and

other health care providers, other care providers such as the police, the fire department and social services, mass media and the general public

4. PROFESSIONALISM AND OTHER ETHICAL AND LEGAL ISSUES

- Emergency Physicians must maintain a professional behavior even in stressful environments.
- They need to know to work within a team or as a leader of a team.
- They must learn to delegate work and appropriate referral.
- Maintaining patient confidentiality is must.
- Emergency Physicians must operate within the legal framework of the country.

5. ORGANISATIONAL PLANNING AND SERVICE MANAGEMENT SKILLS

This competence is needed to enhance the safety and quality of patient care and the work environment.

6. EDUCATION AND RESEARCH

Continuous education, honing their teaching skills, critical appraisal of scientific literature, being actively involved in clinical and basic research is expected.

A. SYSTEMWISE APPROACH TO EMERGENCIES

I. CARDIOVASCULAR EMERGENCIES IN ADULTS AND CHILDREN

1. Arrhythmias
2. Congenital heart disorders
3. Contractility disorders, pump failure
4. Cardiomyopathies, congestive heart failure, acute pulmonary oedema, tamponade
5. Valvular emergencies
6. Inflammatory and infectious cardiac disorders
7. Endocarditis, myocarditis, pericarditis
8. Ischemic heart disease - Acute coronary syndromes, stable angina
9. Traumatic injuries
10. Vascular and thromboembolic disorders
11. Aortic dissection/aneurysm rupture, deep vein thrombosis, hypertensive emergencies, occlusive arterial disease, thrombophlebitis, pulmonary embolism, pulmonary hypertension

II. DERMATOLOGICAL EMERGENCIES IN ADULTS AND CHILDREN

1. Inflammatory and Infectious disorders
2. Skin manifestations of immunological disorders, systemic disorders & toxic disorders

III. ENDOCRINE AND METABOLIC EMERGENCIES IN ADULTS AND CHILDREN

1. Acute presentation of inborn errors of metabolism
2. Adrenal insufficiency, crisis and other adrenal emergencies
3. Disorders of glucose metabolism
4. Hyperosmolar hyperglycemic state, hypoglycemia, ketoacidosis
5. Thyroid emergencies hyperthyroidism, hypothyroidism, myxedema, thyroid storm

IV. FLUID AND ELECTROLYTE DISTURBANCES

1. Acid-Base disorders
2. Electrolyte disorders

3. Volume status and fluid balance

V. EAR, NOSE, THROAT, ORAL AND NECK EMERGENCIES IN ADULTS AND CHILDREN

1. Bleeding
2. Complications of tumors
3. Airway obstruction, bleeding
4. Foreign bodies
5. Inflammatory and Infectious disorders
6. Angioedema, epiglottitis, laryngitis, tonsillar abscess
7. Traumatic problems
8. Post-operative complications

VI. GASTROINTESTINAL EMERGENCIES IN ADULTS AND CHILDREN

1. Congenital disorders
2. Hirschsprung's disease, Meckel's diverticulum, pyloric stenosis
3. Inflammatory and Infectious disorder –appendicitis, cholecystitis, cholangitis, diverticulitis, exacerbations and
4. Complications of inflammatory bowel diseases, gastritis, gastroenteritis,
5. gastro-esophageal reflux disease, pancreatitis, peptic ulcer, peritonitis
6. Metabolic disorders
7. Traumatic and mechanical problems- foreign bodies, hernia strangulation, intestinal obstruction and occlusion
8. Tumors
9. Acute hepatitis, Cirrhosis of liver, Hepatic failure, Hepatic encephalopathy,
10. Vascular disorders: Ischemia and Bleeding
11. Ischemic colitis, upper and lower gastrointestinal bleeding, mesenteric ischemia
12. Other problems
13. Complications of gastrointestinal devices and surgical procedures

VII. GYNAECOLOGICAL AND OBSTETRIC EMERGENCIES

1. Inflammatory and Infectious disorders
2. Obstetric emergencies- Hypertension, diabetes, anemia, thyroid disorders, ectopic pregnancy, emergency delivery, eclampsia ,HELLP syndrome during pregnancy, hyperemesis gravidarum, placenta praevia, Abruptio placentae
3. Post-partum hemorrhage
4. Traumatic and related problems
5. Ovarian torsion
6. Tumors
7. Vaginal bleeding
8. Cardiac arrest in pregnancy- resuscitation, peri-mortem caesarian section

VIII. HAEMATOLOGY AND ONCOLOGY EMERGENCIES IN ADULTS AND CHILDREN

1. Anemias
2. Complications of lymphomas and leukaemias
3. Congenital disorders- Haemophilias and Von Willebrand's disease, hereditary hemolytic, anemias, sickle cell disease
4. Inflammatory and Infectious disorders
5. Neutropenic fever, infections in immuno-compromised patients
6. Vascular disorders: Ischemia and Bleeding

7. Acquired bleeding disorders (coagulation factor deficiency, disseminated
8. intravascular coagulation), drug induced bleeding (anticoagulants, anti-platelet agents, fibrinolytics), idiopathic thrombocytopenic purpura, thrombotic thrombocytopenic purpura
9. Transfusion reactions, Massive transfusion

IX. IMMUNOLOGICAL EMERGENCIES IN ADULTS AND CHILDREN

1. Allergies and anaphylactic reactions
2. Inflammatory and Infectious disorders
3. Acute complications of vasculitis

X. INFECTIOUS DISEASES AND SEPSIS IN ADULTS AND CHILDREN

1. Common viral and bacterial infections
2. Food and water-borne infectious diseases
3. HIV infection and AIDS
4. Common tropical diseases
5. Parasitic infestations
6. Rabies
7. Sepsis and septic shock
8. Sexually transmitted diseases
9. Streptococcal toxic shock syndrome
10. Tetanus

XI. MUSCULO-SKELETAL EMERGENCIES

1. Congenital disorders
2. Dislocated hip, osteogenesis imperfecta
3. Inflammatory and Infectious disorders
4. Arthritis, bursitis, cellulitis, complications of systemic rheumatic diseases, necrotizing fasciitis, osteomyelitis, polymyalgia rheumatica, soft tissue infections
5. Metabolic disorders
6. Complications of osteoporosis and other systemic diseases
7. Traumatic and degenerative disorders
8. Common fractures and dislocations, compartment syndromes, crush syndrome, osteoarthritis, rhabdomyolysis, soft tissue trauma
9. Tumors: pathological fractures

XII. NEUROLOGICAL EMERGENCIES IN ADULTS AND CHILDREN

1. Inflammatory and Infectious disorders - brain abscess, meningitis, encephalitis, febrile seizures in children, Guillain-Barré syndrome, meningitis, peripheral facial palsy (Bell's palsy), temporal arteritis
2. Traumatic and related problems - Complications of CNS devices, spinal cord syndromes, peripheral nerve trauma and entrapment, traumatic brain injury
3. Tumors - common presentations and acute complications of neurological and metastatic tumors
4. Vascular disorders: Ischemia and Bleeding Carotid artery dissection, stroke, subarachnoid hemorrhage, subdural and extradural hematoma, transient ischemic attack, venous sinus thrombosis
5. Other problems - Acute complications of chronic neurological conditions (e.g. myasthenic crisis, multiple sclerosis), acute peripheral neuropathies, seizures and
6. Status epilepticus

XIII. OPHTHALMIC EMERGENCIES IN ADULTS AND CHILDREN

1. Inflammatory and Infectious disorders : conjunctivitis, dacryocystitis, endophthalmitis, iritis, keratitis, orbital and Periorbital cellulitis, uveitis
2. Traumatic and related problems: Foreign body in the eye, ocular injuries,
3. Vascular disorders: Ischemia and Bleeding -retinal artery and vein occlusion, vitreous hemorrhage
4. Acute glaucoma, retinal detachment

XIV. PULMONARY EMERGENCIES IN ADULTS AND CHILDREN

1. Congenital -cystic fibrosis
2. Inflammatory and Infectious disorder -asthma, bronchitis, bronchiolitis, pneumonia, empyema, COPD exacerbation, lung abscess, pleurisy and pleural effusion, pulmonary fibrosis, tuberculosis
3. Traumatic and related problem foreign body inhalation, haemothorax, tension pneumothorax,
4. pneumomediastinum
5. Tumors - common complications and acute complications of pulmonary and metastatic tumors
6. Vascular disorders pulmonary embolism
7. Other disorders
8. Acute lung injury, atelectasis, ARDS, spontaneous pneumothorax, Hemoptysis.

XV. PSYCHIATRIC AND BEHAVIOUR DISORDERS

1. Behavior disorders
2. Affective disorders, confusion and consciousness disturbances, intelligence disturbances, memory disorders, perception disorders, psycho-motor disturbances, thinking disturbances.
3. Common psychiatric emergencies
4. Acute psychosis, anorexia and bulimia complications, anxiety and panic attacks, conversion disorders, deliberate self-harm and suicide attempt
5. Depressive illness, personality disorders, substance, drug and alcohol abuse

XVI. RENAL AND UROLOGICAL EMERGENCIES IN ADULTS AND CHILDREN

1. Inflammatory and Infectious disorders -epididymo-orchitis, glomerulonephritis, pyelonephritis, prostatitis, sexually transmitted diseases, urinary tract infections, etc.
2. Metabolic disorders- Acute kidney Injury, uremia , hemolytic uremic syndrome
3. Traumatic and related problems
4. Urinary retention, testicular torsion
5. Tumors
6. Vascular disorders: Ischemia and Bleeding
7. Comorbidities in dialysis and renal transplanted patients
8. Complications of urological procedures and devices

XVII. TRAUMA IN ADULTS AND CHILDREN

1. Origin of trauma: Thermal Injury, Chemical injury, Ionizing radiation Injury blunt trauma, penetrating trauma
2. Anatomical location of trauma: Head and neck, maxillo-facial, thorax, abdomen, pelvis, spine, extremities Polytrauma patient

3. Trauma in specific populations: children, elderly, pregnant women.

B. COMMON PRESENTING SYMPTOMS

I. ACUTE ABDOMINAL PAIN

1. Gastrointestinal causes - appendicitis, cholecystitis, cholangitis, acute pancreatitis, complications of hernias, diverticulitis, hepatitis, hiatus hernia, inflammatory bowel disease, intestinal obstruction, ischemic colitis, mesenteric ischemia, peptic ulcer, peritonitis, hollow viscus perforation
2. Cardiac/vascular causes - acute myocardial infarction, aortic dissection, aortic aneurysm rupture
3. Dermatological causes - herpes zoster, other local inflammatory & infective causes
4. Endocrine and metabolic causes- Addison's disease, diabetic ketoacidosis, other metabolic acidosis, porphyria
5. Gynecological and Obstetric causes- complications of pregnancy, ectopic pregnancy, pelvic inflammatory disease, rupture of ovarian cyst, ovarian torsion
6. Hematological causes- acute porphyria crisis, Familial Mediterranean fever, sickle cell crisis
7. Musculo-skeletal causes referred pain from thoraco-lumbar spine
8. Renal and Genitourinary causes- pyelonephritis, renal stones
9. Respiratory causes- pneumonia, pleurisy
10. Toxicology - poisoning
11. Trauma- Abdominal

II. ALTERED BEHAVIOUR AND AGITATION

1. Neurological causes- cerebral space-occupying lesions, dementia, hydrocephalus, intracranial hypertension, CNS infections
2. Toxicology- alcohol and drug abuse, poisoning
3. Endocrine and metabolic causes- hypoglycemia, hyperglycemia, electrolyte imbalance, hyperthermia, hypoxemia
4. Cardiac/Vascular causes- hypertension, vasculitis
5. Psychiatric causes- acute psychosis, depression

III. ALTERED LEVEL OF CONSCIOUSNESS IN ADULTS AND CHILDREN

1. Neurological causes -cerebral tumor, epilepsy and status epilepticus, meningitis, encephalitis, stroke, subarachnoid hemorrhage, subdural and extradural hematoma, traumatic brain injury
2. Cardiovascular causes- hypoperfusion states, shock
3. Endocrine and metabolic causes- electrolyte imbalances, hepatic coma, hypercapnia, hypothermia, hypoxia, hypoglycemia/ hyperglycemia, uremia
4. Gynecological and Obstetric causes - eclampsia
5. Infectious causes - septic shock
6. Psychiatric causes - Conversion syndrome
7. Respiratory causes - Respiratory failure
8. Toxicology - Alcohol intoxication, carbon-monoxide poisoning, narcotic and sedative poisoning, other substances

IV. BACK PAIN

1. Musculo-Skeletal causes - Fractures, intervertebral disc strain and degeneration, strain of muscles, ligaments and tendons, spinal stenosis, arthritis, arthrosis
2. Cardiovascular causes- aortic aneurysm, aortic dissection

3. Infectious causes- osteomyelitis, discitis, pyelonephritis, prostatitis
4. Endocrine and metabolic causes- Paget's disease
5. Gastrointestinal causes- pancreatitis, cholecystitis
6. Dermatological causes- herpes zoster
7. Gynecological causes- endometriosis, pelvic inflammatory disease
8. Hematological and Oncological causes- abdominal or vertebral tumors
9. Neurological cause- subarachnoid hemorrhage
10. Renal and Genitourinary causes- renal abscess, renal calculi
11. Trauma

V. BLEEDING (NON TRAUMATIC)

1. Ear, Nose, Throat causes Ear bleeding (otitis, trauma, tumors), epistaxis
2. Gastrointestinal causes Hematemesis and melena (acute gastritis, gastro-duodenal ulcer, Mallory Weiss syndrome, esophageal varices) rectal bleeding (acute diverticulitis, hemorrhoids, inflammatory bowel disease, tumors)
3. Gynecological and Obstetric causes Menorrhagia/metrorrhagia (abortion, abruptio placentae, tumors)
4. Renal and Genitourinary causes Hematuria (pyelitis, tumors, urolithiasis)
5. Respiratory causes Hemoptysis (bronchiectasis, pneumonia, tumors, tuberculosis)

VI. CARDIAC ARREST

1. Cardiac arrest treatable with defibrillation Ventricular fibrillation, pulseless ventricular tachycardia
2. Pulseless electric activity Acidosis, hypoxia, hypothermia, hypo/hyperkalemia, hypocalcaemia, hypo/hyperglycemia, hypovolemia, tension pneumothorax, cardiac tamponade, myocardial infarction, pulmonary embolism, poisoning
3. Asystole

VII. CHEST PAIN

1. Cardiac/vascular causes Acute coronary syndrome, aortic dissection, arrhythmias, pericarditis, pulmonary embolism
2. Respiratory causes Pneumonia, pneumomediastinum, pneumothorax (especially tension pneumothorax), pleurisy
3. Gastrointestinal causes -Gastro-esophageal reflux, esophageal rupture, esophageal spasm
4. Musculo-Skeletal causes costosternal injury, costochondritis, intercostal muscle pain, pain referred from thoracic spine
5. Psychiatric causes - anxiety, panic attack
6. Dermatological causes - herpes zoster

VIII. CRYING BABY

1. Infections: herpes stomatitis, meningitis, osteomyelitis, urinary tract infection
2. testicular torsion, trauma, teeth problems,
3. Cardiac: arrhythmias, congestive heart failure
4. reaction to milk, reaction to medications, reflux
5. Immunization and allergic reactions, insect bites
6. Eye corneal abrasions, glaucoma, ocular foreign bodies
7. Some gastrointestinal causes: hernia, intussusception, volvulus

IX. DIARRHOEA

1. Infectious causes: AIDS, bacterial enteritis, viral, parasites, food-borne, toxins
2. Toxicological causes: drug related, poisoning (including heavy metals, mushrooms, organophosphates, rat poison, seafood)
3. Endocrine and metabolic causes: carcinoids, diabetic neuropathy
4. Gastrointestinal causes: diverticulitis, dumping syndrome, ischemic colitis, inflammatory bowel disease, enteritis due to radiation or chemotherapy
5. Hematological and Oncological causes: toxicity due to cytostatic therapies
6. Immunology: food allergy
7. Psychiatric disorders: diarrhea "factitia"

X. DYSPNOEA

1. Respiratory Causes: airway obstruction, broncho-alveolar obstruction, parenchymal diseases, pulmonary shunt, pleural effusion, atelectasis, pneumothorax
2. Cardiac/vascular causes: cardiac decompensation, cardiac tamponade, pulmonary embolism
3. Ear, Nose, Throat causes: epiglottitis, croup and pseudocroup
4. Fluid & Electrolyte disorders: hypovolemia, shock, anemia
5. Gastrointestinal causes: hiatus hernia
6. Immunological causes: vasculitis
7. Metabolic causes: metabolic acidosis, uremia
8. Neurological causes: myasthenia gravis, GuillainBarrè syndrome, amyotrophic lateral sclerosis
9. Psychiatric disorders: conversion syndrome
10. Toxicology: CO intoxication, cyanide intoxication
11. Trauma: flail chest, lung contusion, traumatic pneumothorax, haemothorax

XI. FEVER AND ENDOGENOUS INCREASE IN BODY TEMPERATURE

1. Systemic infectious causes: sepsis and septic shock, parasitosis, flu-like syndrome
2. Organ-specific infectious causes: endocarditis, myocarditis, pharyngitis, tonsillitis, abscesses, otitis, cholecystitis and cholangitis, meningitis, encephalitis
3. Non-infectious causes: Lyell syndrome, Stephen-Johnson syndrome, thyroid storm, pancreatitis, inflammatory bowel disease, pelvic inflammatory disease, toxic shock,
4. Hematological and Oncological causes: leukemia and lymphomas, solid tumors
5. Immunological causes: arteritis, arthritis, lupus, sarcoidosis
6. Musculo-Skeletal causes: osteomyelitis, fasciitis and cellulitis
7. Neurological causes: cerebral hemorrhage
8. Psychiatric causes: factitious fever
9. Renal and Genitourinary causes: pyelonephritis, prostatitis
10. Toxicology

XII. HEADACHE IN ADULTS AND CHILDREN

1. Vascular causes: migraine, cluster headache, tension headache, cerebral hemorrhage, hypertensive encephalopathy, ischemic stroke
2. Hematological and Oncological causes: brain tumors
3. Immunological causes: temporal arteritis, vasculitis
4. Infectious causes: abscesses, dental infections, encephalitis, mastoiditis,

- meningitis, sinusitis
5. Musculo-Skeletal causes: cervical spine diseases, temporomandibular joint syndrome
 6. Neurological causes: trigeminal neuralgia
 7. Ophthalmological causes: optic neuritis, acute glaucoma
 8. Toxicology: alcohol, analgesic abuse, calcium channel blockers, glutamate, nitrates, opioids and caffeine withdrawal
 9. Trauma: head trauma

XIII. JAUNDICE

1. Gastrointestinal causes: cholangitis, hepatic failure, pancreatic head tumor, pancreatitis, obstructive cholestasis
2. Cardiac/Vascular causes: chronic cardiac decompensation
3. Hematological and Oncological causes: hemolytic anemias, thrombotic thrombocytopenic purpura, hemolytic uremic syndrome, disseminated intravascular coagulation
4. Infectious causes: malaria, leptospirosis, infective endocarditis
5. Gynecological causes: HELLP syndrome
6. Toxicology: drug induced, hemolytic anemias, snake venom

XIV. PAIN IN ARMS

1. Cardiac/Vascular causes: aortic dissection, deep venous thromboembolism, ischemic heart disease
2. Musculo-skeletal causes: periarthritits, cervical spine arthrosis
3. Trauma

XV. PAIN IN LEGS

1. Cardiac/Vascular causes: acute ischemia, arteritis, deep venous thrombosis, superficial thrombophlebitis
2. Immunological causes: polymyositis
3. Infectious causes: arthritis, cellulites, necrotizing fasciitis, osteomyelitis
4. Musculo-Skeletal causes: sciatalgia
5. Neurological causes: sciatica
6. Nervous system causes: peripheral nerve compression
7. Trauma

XVI. PALPITATIONS

1. Cardiac/Vascular causes: brady-arrythmias (including sinus bradycardia and AV blocks), extrasystoles, tachy-arrythmias (including atrial fibrillation, sinus tachycardia, supraventricular tachycardia, ventricular tachycardia)
2. Endocrine and metabolic causes: Thyrotoxicosis, phaeochromocytoma
3. Toxicology - Drugs

XVII. SEIZURES IN ADULTS AND CHILDREN

1. Neurological causes
2. Generalized epilepsy, partial complex or focal epilepsy, status epilepticus
3. Cardiac/Vascular causes: hypertensive encephalopathy, syncope, dysrhythmias, migraines
4. Endocrine and metabolic causes: metabolic seizures
5. Gynecological causes: eclampsia
6. Infective causes: febrile seizures in children
7. Psychiatric causes: narcolepsy, pseudo-seizures

8. Respiratory causes: respiratory arrest
9. Toxicology: drugs/toxins

XVIII. SHOCK IN ADULTS AND CHILDREN

1. Anaphylactic
2. Cardiogenic
3. Hypovolemic
4. Obstructive
5. Cardiac/Vascular causes - cardiogenic shock, arrhythmias
6. Endocrine and metabolic causes - Addison's crisis
7. Fluid and Electrolyte disorders - hypovolemic shock
8. Gastrointestinal causes - vomiting, diarrhea
9. Gynecological causes - toxic shock
10. Immunological causes - anaphylactic shock
11. Infectious causes - septic shock
12. Neurological causes - neurogenic shock
13. Trauma - hypovolemic shock, neurogenic shock.

XIX. SKIN MANIFESTATIONS IN ADULTS AND CHILDREN

1. Dermatological causes - eczema, psoriasis, skin tumors
2. Immunological causes - vasculitides, urticaria, Stevens-Johnson syndrome, Lyell syndrome (TENS)
3. Infectious causes - viral exanthemata, meningococemia, herpes zoster/simplex, abscesses of the skin
4. Psychiatric causes - Self-inflicted skin lesions or from abuse
5. Toxicology
6. Hematological and Oncological causes - idiopathic thrombocytopenic purpura, thrombotic thrombocytopenic purpura

XX. SYNCOPE

1. Cardiac/vascular causes: aortic dissection, cardiac arrhythmias (including brady-tachy syndrome, Brugada syndrome, drug overdose, long QT syndrome, sick sinus syndrome, torsades de pointes, ventricular tachycardia), other causes of hypoperfusion (including ischemia, valvular, hemorrhage, obstruction: e.g. aortic stenosis, pulmonary embolism, tamponade) orthostatic hypotension
2. Endocrine and metabolic causes: Addison's disease
3. Fluid and Electrolyte disorders: hypovolemia
4. Gastrointestinal causes - vomiting, diarrhea
5. Neurological causes - autonomic nervous system disorder, epilepsy, vasovagal reflex,
6. Toxicology - alcoholic or drug consumption

XXI. URINARY SYMPTOMS (DYSURIA, OLIGO/ANURIA, POLYURIA)

1. Renal and Genitourinary causes: acute renal failure, acute urinary retention, cystitis and pyelonephritis, prostatitis
2. Cardiac/Vascular causes: cardiac decompensation
3. Endocrine and metabolic causes - diabetes mellitus, diabetes insipidus
4. Fluid and Electrolyte disorders: Hypovolemia

XXII. VERTIGO AND DIZZINESS

1. Ear and Labyrinth causes: benign postural vertigo, Meniere's disease, otitis, vestibular neuritis, viral labyrinthitis

2. Cardiac/Vascular causes: arrhythmias, hypotension
3. Endocrine and metabolic causes: hypoglycemia
4. Hematological and Oncological causes: anemias
5. Nervous system causes: acoustic neuroma, bulbar or cerebellar lesions, multiple sclerosis, temporal lobe epilepsy
6. Psychiatric causes: anxiety
7. Respiratory causes: hypoxia
8. Toxicology: alcohol abuse, drugs and substances

XXIII. VOMITING

1. Gastrointestinal causes: appendicitis, cholecystitis, gastroparesis, gastric obstruction and retention, gastroenteritis, hepatitis, pancreatitis, pyloric stenosis, small bowel obstructions
2. Cardiac/Vascular causes - myocardial ischemia
3. Ear, Nose, Throat causes, vestibular disorders
4. Endocrine and metabolic causes -diabetic ketoacidosis, hypercalcemia
5. Fluid and Electrolyte disorders - hypovolemia
6. Gynecological and Obstetric causes - pregnancy
7. Infectious causes -sepsis, meningitis
8. Neurological causes - cerebral edema or hemorrhage, hydrocephalus, intracranial space occupying lesions
9. Ophthalmological causes - acute glaucoma
10. Psychiatric causes - eating disorders
11. Renal and Genitourinary causes - renal calculi, uremia
12. Toxicology

C. SPECIFIC ASPECTS OF EMERGENCY MEDICINE

I. ABUSE AND ASSAULT IN ADULTS AND CHILDREN

1. Abuse in the elderly and impaired
2. Child abuse and neglect
3. Intimate partner violence and abuse
4. Sexual assault
5. Patient safety in Emergency Medicine
6. Violence management and prevention in the Emergency Department

II. ANALGESIA AND SEDATION IN ADULTS AND CHILDREN

1. Pain transmission (anatomy, physiology, pharmacology)
2. Pain assessment
3. Pharmacology of sedative and pain relieving drugs
4. Psychological and social aspects of pain in pediatric, adult and elderly patients

III. DISASTER MEDICINE

1. Disaster preparedness
2. Major incident planning/procedures/practice
3. Disaster response
4. Mass gatherings
5. Specific medical topics (triage, bioterrorism, blast and crush injuries, chemical agents, radiation injuries)
6. Debriefing and mitigation

IV. ENVIRONMENTAL ACCIDENTS IN ADULTS AND CHILDREN

1. Electricity (electrical and lightning injuries)
2. Flora and Fauna (injuries from exposure, bites and stings)
3. High-altitude (medical problems)
4. NBCR (nuclear, biological, chemical and radiological: , decontamination, specific aspects)
5. Temperature (heat and cold related emergencies)
6. Travel medicine
7. Water (near-drowning, dysbarism and complications of diving, marine fauna)

V. FORENSIC ISSUES

1. Basics of relevant legislation in the country of practice
2. Recognize and preserve evidence
3. Provide appropriate medical documentation (including forensic and clinical photography, collection of biological samples, ballistics)
4. Appropriate reporting and referrals (e.g. child abuse or neglect, gunshot and other forms of penetrating wounds, elder abuse, sexual assault allegations)
5. Medico-legal documentation

VI. INJURY PREVENTION AND HEALTH PROMOTION

1. Collection and interpretation of data related to prevention and health promotion
2. Epidemiology of Accidents and Emergencies
3. Formulation of recommendations

VII. PATIENT MANAGEMENT ISSUES IN EMERGENCY MEDICINE

1. Emergency Department organization (administration, structure, staffing, resources)
2. Management of specific populations:
3. children in special circumstances including child protection
4. women
5. elderly patients
6. homeless patients
7. mentally incompetent adults
8. psychiatric patients

VIII. PROBLEMS IN THE ELDERLY

1. Atypical presentations (e.g. abdominal pain, infections, myocardial infarction)
2. Delirium
3. Dementia
4. Falls (causes & investigations)
5. Immobility
6. Multiple pathology and multiple therapies
7. Self-dependency
8. Trauma & co-morbidity

IX. TOXICOLOGY IN ADULTS AND CHILDREN

1. General principles of toxicology and management of poisoned patients
2. Principles of drug interactions
3. Specific aspects of poisoning
 - a. drugs (including paracetamol, amphetamine, anticholinergics, anti-convulsants, antidepressants, antihypertensives, benzodiazepines,

- digitalis, monoamine oxidase inhibitors, neuroleptics)
 - b. industrial, chemicals
 - c. plants & mushrooms
 - d. alcohol abuse and alcohols poisoning
 - e. drugs of abuse
- 4. Organization and information (e.g. poison centers, databases)

X. PRE-HOSPITAL CARE

1. Emergency Medical Services organization (administration, structure, staffing, resources)
2. Medical transport (including neonates and children, air transport)
3. Paramedic training and function
4. Safety at the scene
5. Collaboration with other emergency services (e.g. police, fire department)

XI. PSYCHO-SOCIAL PROBLEMS

1. Social wellbeing of specific populations
2. Patients with social issues
3. Frequent visitors
4. Social care following discharge

D. CORE CLINICAL PROCEDURES AND SKILLS

I. CPR SKILLS

1. Cardio-pulmonary resuscitation procedures in a timely and effective manner according to the current AHA-ECC guidelines for adults and children.
2. BLS, ACLS Certification Mandatory

II. AIRWAY MANAGEMENT SKILLS

1. Open and maintain the airway in the emergency setting (insertion of oropharyngeal or nasopharyngeal airway)
2. Endotracheal intubation
3. Alternative airway techniques in the emergency setting (e.g. laryngeal mask insertion, surgical airway)
4. Difficult airway management algorithm
5. Use of rapid sequence intubation in the emergency setting

III. ANALGESIA AND SEDATION SKILLS

1. Assessment of the level of pain and sedation
2. Monitor vital signs and potential side effects during pain management
3. Provide procedural sedation and analgesia including conscious sedation (including testing of life support equipment)
4. Use of appropriate local, topical and regional anaesthesia techniques

IV. BREATHING AND VENTILATION MANAGEMENT SKILLS

1. Assessment of breathing and ventilation
2. Oxygen therapy
3. Interpretation of blood gas analysis, pulse oximetry and capnography
4. Bag-mask-valve ventilation
5. Thoracocentesis
6. Chest tube insertion, connection to under-water drainage and assessment of functioning
7. Non-invasive ventilation techniques
8. Invasive ventilation techniques

V. CIRCULATORY SUPPORT AND CARDIAC SKILLS AND PROCEDURES

1. Administration of fluids including blood and substitutes
2. Monitoring of ECG and the circulation
3. Defibrillation and pacing (e.g. cardioversion, transcutaneous pacing)
4. Emergency pericardiocentesis
5. ED thoracotomy
6. Vascular access (peripheral venous, arterial, and central venous catheterization, intraosseous access)

VI. DIAGNOSTIC PROCEDURES AND SKILLS

1. Interpretation of ECG
2. Appropriate request and interpretation of laboratory investigations (blood chemistry, blood gases, respiratory function testing and biological markers)
3. Appropriate request and interpretation of imaging (e.g. x-rays, ultrasound, CT/MRI)
4. Performance of focused sonographic assessment

VII. ENT SKILLS AND PROCEDURES

1. Anterior rhinoscopy
2. Insertion of nasal pack
3. Inspection of oropharynx and larynx
4. Otoscopy
5. Removal of foreign body if airway is compromised
6. Insertion and replacement of tracheostomy tube

VIII. GASTROINTESTINAL PROCEDURES

1. Insertion of nasogastric tube
2. Gastric lavage
3. Peritoneal lavage
4. Abdominal paracentesis
5. Measurement of abdominal pressure
6. Proctoscopy

IX. GENITOURINARY PROCEDURES

1. Insertion of indwelling urethral catheter
2. Suprapubic cystostomy
3. Testicular torsion reduction
4. Evaluation of patency of urethral catheter
5. Management of paraphimosis
6. Dorsal slit operation

X. HYGIENE SKILLS AND PROCEDURES

1. Decontamination of patient and the environment
2. Patient isolation and staff protection
3. Hand hygiene and surgical hand scrub
4. Aseptic technique of performing procedures

XI. MUSCULOSKELETAL TECHNIQUES

1. Aseptic joint aspiration
2. Fracture immobilisation
3. Reduction of joint dislocation
4. Log roll and spine immobilisation
5. Splinting (plasters, braces, slings, tapes and other bandages)

6. Management of compartment syndrome
7. Fasciotomy, escharotomy

XII. NEUROLOGICAL SKILLS AND PROCEDURES

1. Evaluation of consciousness
2. Evaluation of Stroke
3. Fundoscopy
4. Lumbar puncture
5. Interpretation of neuro-imaging

XIII. OBSTETRIC AND GYNAECOLOGICAL SKILLS AND PROCEDURES

1. Emergency delivery
2. Vaginal examination using speculum
3. Assessment of the sexual assault victim
4. Peri-mortem caesarian section

XIV. OPHTHALMIC SKILLS AND PROCEDURES

1. Removal of foreign body from the eye
2. Fundus examination
3. Slit lamp use
4. Lateral canthotomy

XV. TEMPERATURE CONTROL PROCEDURES

1. Measuring and monitoring of body temperature
2. Cooling techniques (evaporative cooling, ice water or slush immersion)
3. Internal cooling methods
4. Warming techniques
5. Monitoring heat stroke patients
6. Treatment and prevention of hyper- and hypothermia

XVI. TRANSPORTATION OF THE CRITICALLY ILL PATIENT

1. Telecommunication and telemedicine procedures
2. Preparation of the EMS vehicle
3. Specific aspects of monitoring and treatment during transportation

XVII. GENERAL SURGICAL SKILLS

1. Abscess incision and drainage
2. Aseptic techniques
3. Treatment of lacerations and soft tissue injuries
4. Wound irrigation and wound closure
5. Wound debridement
6. Minor amputations
7. Minor surgical procedures
8. Abdominal hernia reduction
9. Resuscitation and Management of burns patient including dressing burns patient.
10. ATLS Certification is mandatory

E. 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.

A list of teaching and learning activities designed to facilitate students' acquisition of essential knowledge and skills outlined is given below:

1. **Lectures:** Lectures are to be kept to a minimum. They may, however, be employed for teaching certain topics. Lectures may be didactic or integrated.
 - a. **Didactic Lectures:** Recommended for selected common topics for post graduate students of all specialties. Few topics are suggested as examples:
 - i. Bio-statistics.
 - ii. Use of library.
 - iii. Research methods.
 - iv. Medical code of conduct and medical ethics.
 - v. National Health and Disease Control programs.
 - vi. Communication skills etc.

These topics may preferably be 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
2. **Journal Club:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the log book relevant details. Further, every candidate must make a presentation from the allotted journal(s), selected articles at least four times a year and a total of 12 seminar presentations in three years. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A time table with names of the student and the moderator should be announced at the beginning of every year.
3. **Subject Seminar:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the log book relevant details. Further, every candidate must present on selected topics at least four times a year and a total of 12 seminar presentations in three years. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the subject with names of the student and the moderator should be scheduled at the beginning of every year.
4. **Student Symposium:** Recommended as an optional multi-disciplinary program. The evaluation may be similar to that described for subject seminar.
5. **Ward Rounds:** Ward rounds may be service or teaching rounds.
 - a) **Service Rounds:** Postgraduate students and Interns should do every day for the care of the patients. Newly admitted patients should be worked up by the PGs and presented to the seniors the following day.
 - b) **Teaching Rounds:** Every unit should have 'grand rounds' for teaching purpose. A diary should be maintained for day to day activities by the students. Entries of (a) and (b) should be made in the log book.
6. **Clinico-Pathological Conference:** Recommended once a month for all post graduate students. Presentation is done by rotation.
7. **Inter Departmental Meetings:** Strongly recommended particularly with departments of cardiology, neurology, anesthesia and critical care, and radio-diagnosis. These meetings should be attended by post graduate students and relevant entries must be made in the Log Book.
8. **Teaching Skills:** Post graduate students must teach under graduate stu-

dents (e.g. medical, nursing) by demonstrations, bed side clinics, tutorials, lectures etc. Assessment is made using a checklist by faculty as well students. Record of their participation should be kept in the Log book. Training of post graduate students in educational science and technology is recommended.

9. **Continuing Medical Education Programs (CME):** Recommended that at least 2 state level CME programs should be attended by each student in 3 years.

10. **Conferences:** Attending conferences is optional. However it is encouraged.

Rotation and posting in other departments

The listed knowledge and skills are to be learnt over a period of 3 years. The process is a continuous one. However the recommended period and timing of training in basic subjects, allied departments and specialty departments is given below.

Basic Science

Basic science should be an essential part of training. It should be done as concurrent studies during the 1st year of training. At least two hours daily may be in the first six months of the course. In the first year, during the morning session, time is spent in the parent department. In the afternoons basic science teaching relevant to emergency medicine can be done in the respective departments.

Topics for study include anatomy, physiology, pathology, microbiology, pharmacology, anesthesia and radiology.

Radiology: concurrent study. Adequate exposure to modern imaging modalities like ultrasound, CT, MRI and angiography

Allied Specialty Training

Postings to other specialty departments and duration of postings are as under:

Department	Duration of posting
Pulmonology and RICU	weeks 2
Cardiology and CCU	weeks 2
Surgery and SICU	weeks 2
Anesthesia	weeks 2
Pediatrics	month 1
OBG	week 1
Orthopedics	week 1
ENT	week 1
Ophthalmology	week 1
Medicine and MICU	month 1
Total	months 5

F. Dissertation

Every candidate pursuing MD 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 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 a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical anal-

ysis, comparison of results, and drawing conclusions.

Every candidate shall submit to the Registrar (Academic) of the Deemed to be University in the prescribed form, 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 Deemed to be University. The synopsis shall be sent through proper channel.

Such synopsis will be reviewed and the dissertation topic will be registered by the Deemed to be University. No change in the dissertation topic or guide shall be made without prior approval of the Deemed to be University.

The dissertation should 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. Summarys
9. References
10. Tables
11. Annexures

The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexures. 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 Registrar (Evaluation), six months before final examination, on or before the dates notified by the Deemed to be University. The dissertation shall be valued by examiners appointed by the Deemed to be University. Approval of dissertation work is an essential precondition for a candidate to appear in the Deemed to be University examination.

G. Monitoring the Learning Progress

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

The learning outcomes to be assessed should include: (1) Personal attitudes, (2) Acquisition of knowledge, (3) Clinical and operative skills, (4) Teaching skills and (5) Dissertation.

1. Personal Attitudes: The essential items are:

- a. Caring attitudes.
- b. Initiative.
- c. Organizational ability.
- d. Potential to cope with stressful situations and undertake responsibility
- e. Trust worthiness and reliability.
- f. To understand and communicate intelligibly with patients and others.
- g. To behave in a manner that establishes professional relationships with patients and colleagues.
- h. Ability to work in team.
- i. A critical enquiring approach to the acquisition of knowledge.

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

2. **Acquisition of Knowledge:**The methods used comprise of 'Log Book' which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The log book should be periodically validated by the supervisors. Some of the activities are listed.
 - a. **Journal Review Meeting (Journal Club):**The ability to do literature search, in-depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist
 - b. **Seminars / Symposia:** The topics should be assigned to the student well in advance to facilitate detailed 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
 - c. **Clinico-Pathological conferences:** This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a check list similar to that used for seminar.
 - d. **Audit:** Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.
3. **Clinical skills**
 - a. **Day to Day work:**Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills
 - b. **Clinical meetings:**Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list
 - c. **Clinical and Operative 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.
4. **Teaching skills:**Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students
5. **Dissertation in the Department:** Periodic presentations are to be made in the department. Initially the topic selected is to be presented before submission to the Deemed to be University for registration, again before finalization for critical evaluation and another before final submission of the completed work
6. **Periodic tests:**The 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.
7. **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 men-

tion may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

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 program of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate.

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

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.

H. Scheme of Examination

THEORY

-400 marks

There shall be four question papers, each of three hours duration. Each paper shall consist of two long essay questions, each question carrying 20 marks 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. Details of distribution of topics for each paper will be as follows:

Paper I – Physiology, Biochemistry, Pathology, and Pharmacology as applied to emergency medicine. General Emergency Medicine concepts – CPR, Resuscitation, Pre-hospital systems, Disaster medicine, Blood transfusion, Shock, Multi-organ failure

Paper II - Cardiovascular, Respiratory, Gastrointestinal, Neurological, Nephrology, Endocrine and metabolic emergencies, and other medical emergencies including emergencies due to infectious diseases.

Paper III – Obstetric and gynecological emergencies, surgical emergencies including Trauma, Acute pain management including procedural sedation

Paper IV - Pediatric, Toxicological, Ophthalmic, Oto-rhino-laryngological, Psychiatric, and Dermatological emergencies.

PRACTICALS

Template for Practical Examination of Final Year MD Emergency Medicine candidates

Clinical cases (20 marks each) **200 marks**

Medicine cases	2 cases
Surgical case	1 case
Trauma case	1 case
Paediatric case	1 case
Obs/Gyn	1 case
ENT	1 case
Ophthalmology	1 case
Dermatology	1 case
Undifferentiated patient with altered	

sensorium, belligerent and combative

1 case

Viva

100marks

1. Skill stations and Spotters 60marks
 - a. USG skills
 - b. Megacode (ACLS)
 - c. Airway station
 - d. Cadaver station: Needle cricothyroidotomy, needle thoracostomy, Inter-Costal Drainage Tube placement
 - e. Suturing skills
 - f. Breaking bad news
 - g. Toxicology
 - h. Radiology, ECG, and ABG
 - i. Images from ENT and Ophthalmology
 - j. Images from Dermatology
2. Pedagogy 20marks
3. Candidates Aptitude Assessment 20marks

Explanations and clarification of the exam process (Copy to be given to the examiners at the start of the day)

Clinical cases

(15 minutes for taking the case + 15 minutes for discussion)

For the first four cases (two from medicine, one surgical and one trauma) the candidates shall be evaluated under the following headings:

1. Method of taking history
2. Clinical examination and eliciting important, relevant signs (assessment skills)
3. Asking for appropriate and relevant monitors, point of care and laboratory investigations (prior to this the candidate is encouraged to give a differential diagnosis and explain why the investigations are asked for. The logical thinking of the candidate is tested)
4. Develop a plan of management and disposition
5. Attitude and communication skills

For the next six cases candidate testing shall proceed as follows:

(10 minutes for taking the case + 5 minutes for discussion)

1. Initial narration of the presenting symptoms and major findings by the examinee
2. Candidate is asked to demonstrate a specific assessment skill or describe an initial management plan
3. Spotters

(5 minutes at each station, observe and write answers on a sheet)

1. Toxicology station
 - A specimen of venomous snake
 - Identify
 - List the major effects of envenomation
 - A box or bottle of commonly consumed poison
 - Identify
 - Mention the antidote or list major manifestations of intoxication
2. Images from radiology, ER floor (4 images total)
 - X-ray: abdominal films from surgical cases, typical chest films from pulmonology cases, etc.

- CT Brain: Extradural haemorrhage from trauma, stroke patients' films with haemorrhage, etc.
- ECG with common tachy or brady arrhythmia
- Point-of-care-ultrasound video clip

The candidate is asked to:

Identify the pathology

Write the Critical Treatment Decision (CTD) Images from Ophthalmology and ENT (2 images from each)

The candidate is asked to:

Identify the pathology

Write the Critical Treatment Decision (CTD)

- Ophthalmology images like

Acute central retinal artery occlusion, corneal ulcer, dislocated lens, Herpes zoster ophthalmicus, Fundus showing papilledema

- ENT images like

Haematoma of pinna, Auroscope image of Acute Suppurative Otitis Media, Follicular tonsillitis, Quinicy

3. Images from Dermatology (4 images total)

The candidate is asked to:

Identify the pathology

Write the Critical Treatment Decision (CTD)

Steven-Johnson syndrome, Herpes Zoster, Typical purpuric rashes, Urticaria, Carbuncle, etc.

Skill Stations

(20 minutes per station)

Candidate shall demonstrate the skills appropriate to the given scenario

Candidate is expected to narrate the steps of the procedures in a methodical manner while performing the skill

Interview

All the examiners shall sit together as a panel and interview each candidate (15 minutes per candidate).

A set of drugs and articles commonly used in the Emergency Department shall be available on the table before the examiners.

Copies of the candidates' theses shall be available on the table

The goal of the viva is to assess the candidate on

- Research aptitude
- Knowledge of recent advances
- Administrative skills

Distribution of Marks:

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

Recommended books and Journals

Text books

1. Tintinalli, Judith E Stapczynski, Stephen J et al. Tintinalli's emergency medicine, McGraw Hill Medical Publishing 7th E.2011
2. Marx, Hockberger Walls Rosen's emergency medicine Mosby, 7th E, 2010
3. Dennis L. Kasper, Eugene Braunwald, Anthony S. Fauci et al. Harrison's

- Principles of Internal Medicine 19th E McGraw Hill 2011
4. Norman Williams, Christopher Bulstrode, P Ronan O'Connell. Bailey & Love's Short Practice of Surgery 26E
 5. F. Brunicaudi, Dana Andersen, Timothy Billiar and David Dunn. Schwartz's Principles of Surgery, Ninth E
 6. Brian W Ellis, Hamilton Bailey's emergency surgery. Jaypee Borthers 13th Ed. 2012
 7. Hagberg, Benumof and Hagberg's Airway Management 3/E 2012 Elsevier
 8. Valani - Essential emergency procedural sedation and pain management .LWW 2011
 9. Taylor. K.J.W; Viscomi. G.N EDS., Ultrasound in Emergency Medicine Churchill Livingstone, NY

Reference works recommended

1. William F. Ganong : Review of Medical Physiology, 2000, Lange
2. Lee Mcgregor : Synopsis of Surgical Anatomy, 12th E, 1998, K.M. Varghese
3. W.T. Irvine : Modern Trends in Surgery, Series, Butterworths
4. R.F. Rintoul : Farquharson's Text Book of Operative Surgery, 8th E
5. Cuschieri : Essentials of Surgical Practice, 3rd Edition, 1995, K.M. Varghese Company E 1995
6. Somen Das: A practical Guide to Operative Surgery, 4th Edition, 1999, S. Das, Calcutta.
7. Pankaj Patel, V.V. Dewoodkar, Handbook of Surgical Instruments for Undergraduates, 1992, Bhalani publishing, House
8. R.A. Jamieson and A.W. Kay: Text book of Surgical Physiology, Livingstone.
9. James Kyle : Pye's Surgical Handicraft, Indian Edition, K.M. Varghese Company
10. Mark Feldman Sleisenger and Fordtran's Gastrointestinal and Liver Disease 2Vol. Saunder, Philadelphia-2010
11. Farokh Erach Udawadia. Principles of critical care. Oxford 2E. 2005
12. Fleisher, Gary R Ludwig, Stephen. Text book of pediatric emergency medicine Wolters Kluwer LWW Philadelphia 6E. 2011
13. Mattu, Amal Chanmugam, Arjuns Swadron, Stuart P Tibbles. Avoiding common errors in the emergency department. Wolters Kluwer LWW Philadelphia. 2010
14. Cameron, Peter Jelinck, George Everitt. Text book of pediatric emergency medicine. C L Elsevier Edinburgh 2E 2012
15. Simon, Robert R. Sherman, Scott C. Koenigsknecht, Steren J. Emergency-orthopedics the extremities MC Graw hill. 5th E. 2007
16. Valani Essential Emergency Procedural Sedation and Pain Management 2011.
17. Shah. Essential Emergency Trauma 2011. LWW. 5E.
18. Pope. Harris and Harris Radiology of Emergency Medicine, 5/E 2012. LWW. 2012
19. Amieva-Wang. A Practical Guide to Pediatric Emergency Medicine. 2011. Cambridge
20. Glick, Rachel Lipson. ; Berlin. Emergency psychiatry principal and practice. Wolters Kluwer. 2008
21. Ehlers, Justis. P, Shah, Chirag. P.; The wills eye manual. LWW Wolters Kluwer Philadelphia 5. 2009

22. Rachel Lipson Glick; Jon.S. Berlin; Avrim .B, Fish Kind; Scott.L, Zeller
Emergency psychiatry principles and practice. Lippincott 2009

Journals

1. Journal of Emergencies, Trauma and Shock
2. Emergency Medicine Clinics of North America
3. Academic Emergency Medicine
4. American JI of Emergency Medicine
5. Annals of Emergency Medicine
6. Emergency Medicine JI
7. Clinical Pediatric Emergency Medicine
8. Environmental Toxicology and Pharmacology
9. Journal of Acute Medicine
10. Journal of Emergency Medicine
11. Resuscitation
12. Toxicology
13. Wilderness & Environmental Medicine
14. The New England Journal of Medicine
15. The Lancet
16. British Medical Journal
17. Journal of Association of Physicians



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