

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
ANATOMY 2016

MD

Regulation & Syllabus

MD ANATOMY

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REGULATION AND SYLLABUS FOR POST GRADUATE DEGREE PROGRAMS 2016

MD ANATOMY



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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).

Sl No	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
4.	Teaching skills: Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be assessed 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 relevant publications, consultations, journal reviews, seminars, etc. Special mention may be made of the ability to defend the paper.					
7.	Records: Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.					
8.	Log book: The log book is a record of the important activities of the candidates during his training. Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate. Format for the log book for the different activities is given in Tables 1, 2 and 3 of Chapter III. Copies may be made and used by the institutions.					
Total Score						

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:

Check List – II

**MODEL CHECK-LIST FOR EVALUATION OF
SEMINAR PRESENTATIONS**

Name of the Student:

Name of the Faculty/Observer:

Name of the Student:

Name of the Faculty/Observer:

Date:

Sl 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 - 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)

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						
SI No	Total Score Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4	
MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE							
1.	Interest shown in selecting a topic						
SI No	Appropriate review of literature	Strong Point		Weak Point			
1.	Communication of the purpose of the talk						
3.	Discussion with guide & other faculty						
2.	Evokes audience interest in the subject						
4.	Quality of Protocol						
3.	The introduction						
5.	Preparation of proforma						
4.	The sequence of ideas						
5.	The use of practical examples and/or illustrations	Total Score					
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:

SI 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					

Check List - VII

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

Name of the Student:

Name of the Faculty:

Date:

LOG BOOK

Table 1: Academic activities attended

Name:

Admission Year:

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

LOG BOOK

Table 2: Academic presentations made by the student

Name:

Admission year:

Date	Topic	Type of Presentation Specify Seminar, Journal Club, Presentation, UG teaching

LOG BOOK

Table 3: Diagnostic and Operative procedures performed

Name:

Admission year:

College:

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

Model Overall Assessment Sheet

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

Sl 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													
<p>Note: Use separate sheet for each year.</p> <p>Signature of HOD Signature of Principal</p> <p>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.</p> <p>* KEY: Mean score : Is the sum of all the scores of checklists 1 to 7. A, B, Name of the trainees.</p>														

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 ANATOMY

Goal

The postgraduate course MD Anatomy should enable a medical graduate to become a competent specialist, acquire knowledge and skills in educational technology for teaching, medical, dental and health sciences and conduct research in bio-medical sciences.

Objectives:

At the end of the course, a postgraduate in anatomy shall be able to:

1. Demonstrate comprehensive knowledge and understanding of gross and microscopic structure of human body and skills to demonstrate special dissection, embryology, histologic and histochemical techniques.
2. Comprehend normal disposition, interrelationships, functional and applied anatomy of the various structures of the body.
3. Describe development of human body to provide an anatomical basis for understanding the structure and correlate with functions both in health and in disease presentations.
4. Demonstrate knowledge of basic and systemic embryology including genetic inheritance and sequential developments of organs and systems.
5. Recognize critical stages of development and the effects of common teratogens, gene mutations and environmental hazards.
6. Explain developmental basis of major variations and abnormalities.
7. Aware of contemporary advances and developments in anatomy and related biomedical field.
8. Demonstrate competence in basic concepts of research and acquire a spirit of enquiry.
9. Critically evaluate published research literature.
10. Recognize continuing educational needs and develop skills as a self-directed learner.
11. Select and use appropriate learning resources and teaching techniques as applicable for teaching and evaluation of medical and allied health science students.
12. Carry out professional obligations ethically and in keeping with objectives of National Health Policy.
13. Function as an effective member in health care, research and training.
14. Exhibit interpersonal behaviour in accordance with social norms and expectations.
15. Acquire knowledge relating to latest non-invasive techniques like X-rays, CT scan, MRI, ultrasound and their interpretation in health and disease conditions.
16. Describe the methodology, techniques of embalming, preservation of cadavers and museum techniques, and perform the procedures.
17. Describe and interpret Anatomy Act as in existence

I. Outline of course contents

Theory:

1. History of anatomy.
2. General anatomy.
3. Elements of anatomy.
4. Gross human anatomy including cross sectional anatomy and applied

- anatomy.
5. Principles of microscopy and histological techniques.
 6. General and systemic histology.
 7. General and systemic embryology including growth, development and teratology.
 8. Neuro anatomy.
 9. Surface anatomy.
 10. Radiological anatomy including principles of newer techniques and interpretation of CT scan, sonography and MRI.
 11. Human genetics.
 12. Comparative anatomy.
 13. Principles of physical anthropology.
 14. Museum techniques, embalming techniques including medico legal aspects and knowledge of Anatomy Act.
 15. Medical ethics.
 16. Recent advances in anatomy.

II. Practical schedule

1. The PG students should dissect the entire human cadaver, during the course.
2. They should embalm and maintain record of the embalming work done.
3. They should prepare and mount at least 10 museum specimen.
4. In histology section:
 - a. Collection of tissues, fixing, block making, section cutting, use of different types of microtomes and preparation of general and systemic slides.
 - b. Haematoxylin & eosin
 - i. Preparation of stains.
 - ii. Staining techniques.
 - c. Knowledge of special staining techniques like silver nitrate, PAS staining, osmium tetroxide, Van Gieson etc.
 - d. Embryo (chick embryo) mounting and serial sections of embryo - should be taken, stained with haematoxyline & eosin.
 - e. Knowledge of light microscope and electron microscope.
 - f. Detailed microscopic study of all the tissues (general and systemic slides).

III. Method of Training:

The candidates shall attend all the undergraduate theory and practical classes regularly. Rotation postings of PG students shall be made in the II and III years of the course as follows:

1	General surgery	-	4 weeks	
2	Orthopaedics	-	2 weeks	II year
3	Radiodiagnosis	-	2 weeks	
1	General medicine	-	2 weeks	
2	Paediatrics	-	2 weeks	III year
3	Obstetrics & gynaecology	-	2 weeks	
4	Genetics	-	2weeks	

At the end of the posting, a certificate has to be obtained from the concerned Heads of the departments for satisfactory learning.

The Postgraduate students shall take part in teaching undergraduate students in gross anatomy, histology, tutorials, group discussions and seminars, during the three years of the course.

IV. Seminars & Journal Review Meetings.

The postgraduate students should actively participate in departmental seminars and journal reviews. A record showing the involvement of the student shall be maintained. A diary should be maintained. Seminars journal review are suggested to be conducted alternately once in every 15 days.

V. Maintenance of Record of Work Done.

1. A diary showing each day/s work has to be maintained by the candidate, which shall be submitted to the head of the department for scrutiny on the first working day of the each month.
2. A practical record of work done in histology and gross anatomy with an emphasis on cross sectional anatomy has to be maintained by the candidate and duly scrutinized and certified by the head of the department and to be submitted to the external examiner during the final examination.
3. A list of the seminars and journal clubs that have been attended and participated by the student has to be maintained which should be scrutinized by the Head of the department.

VI. Periodical Assessment and Progress Report.

The post graduate students have to be assessed periodically by conducting written, practical and viva voce examination at the end of every year. The assessment should be based also on participation in seminars, journal review, performance in the teaching and use of teaching aids and progress in dissertation work. Checklists are given in chapter IV for the assessments.

The assessment will be done by all the recognized PG teachers of the department and the progress record should be maintained by the Head of the department.

VII. Dissertation work

During the course of study every candidate has to prepare a dissertation individually, on a selected topic under the direct guidance and supervision of a recognized postgraduate teacher as per MCI and JSSU regulations.

The suggested time schedule for dissertation work is:

1. Preparation work for dissertation, synopsis including pilot study and submission of the synopsis to the Deemed to be University within 6 months from the commencement of course or as per the dates notified by the Deemed to be University from time to time.
2. Data collection for dissertation and writing the dissertation.
3. The candidates shall report the progress of the dissertation work to the concerned guide periodically and obtain clearance for the continuation of the dissertation work.
4. Submission of the dissertation six months prior to the final examination or as per the dates notified by the Deemed to be University from time to time.

VIII. Registration of dissertation topic:

Every candidate shall submit a synopsis in the prescribed proforma for registration of dissertation topic by the Deemed to be University after it is scrutinized by the PG training cum Research Committee of the concerned institution. The synopsis shall be sent within the first 6 months from the commencement of the course or as notified by the Deemed to be University in the calendar of events, to the Registrar (Academic). For details see chapter 1, sl no 9.

Submission of dissertation

The dissertation shall be submitted to the Registrar (Evaluation) of the Deemed to

be University six months prior to the final examination or as notified in the calendar of events. Approval of the dissertation by the panel of examiners is a prerequisite for a candidate to appear for the Deemed to be University examination. (For further details see sl no 9, Chapter 1).

IX. Scheme of Evaluation

A. Theory - 400 marks

The written examination consists of four papers, with maximum marks of 100 for each paper. Each paper will be of three hours duration.

Each Theory paper consists of:

1. Long Essay Questions	2 X 20	40 marks
2. Short Essay Questions	6 X 10	60 marks
Total		100 marks

Paper -I:

1. History of anatomy.
2. General and elements of anatomy.
3. Gross anatomy with applied aspects.

Paper - II:

1. General & systemic embryology including growth, development and teratology.
2. Comparative anatomy.
3. Principles of physical anthropology.

Paper - III:

1. General & systemic histology and principles of microscopy.
2. Histological, museum and embalming techniques including medico legal aspects
3. Human genetics.

Paper - IV:

1. Neuroanatomy
2. Applied anatomy, cross sectional anatomy, radiological anatomy & newer imaging techniques

Note: The topics assigned to the different papers are given as general guidelines. A strict division of subjects may not be possible. Some overlapping of topics is inevitable. Students should be prepared to answer the overlapping topics. Questions on recent advances may be asked in any or all papers.

B. Practical - 200 marks (Gross Anatomy - 100 marks, Histology - 100 marks)

1. Gross Anatomy

To dissect in 3 hours and display for discussion the allotted dissection exercise on a human cadaver.

Distribution of Marks:

Surface Anatomy - 10

Dissection	-	40
Discussion	-	50
Total	=	100 marks

2. Histology

Identification and discussion of 10 stained sections which includes neuroanatomy, embryology and human genetics. 10x4=40 marks.

i)	Preparation of a paraffin block.	10	
ii)	Taking serial sections from blocks provided.	10	40 marks
iii)	Staining of the given section with H & E and Discussion.	20	
iv)	Discussion on histological techniques.		20 marks
	Total -		100 marks

C. Viva-Voce - 100 marks

- This includes all the components of the syllabus along with specimens, skiagrams including newer imaging techniques, bones and embryology models including a problem solving exercise and discussion on the dissertation topic submitted for the examination. 80 Marks
- Pedagogy: Demonstration of teaching skill / techniques 20 Marks

Maximum marks	Theory	Practical	Viva-voce	Total
MD (Anatomy) Examination	400	200	100	700

Recommended Books and Journals / Latest editions

Gross Anatomy:

- Susan Strandring: Gray's Anatomy: The anatomical basis of clinical practice, Churchill Livingstone Elsevier. 41nd edition
- Dutta A.K. Human Anatomy vol. I-III (V edition, VI edition IX Edition) Current publisher.
- Dutta A.K. Principle of General Anatomy. Current Publisher.
- Romanes. Cunningham's Manual of Practical Anatomy vol. I-III, 16th edition Oxford.
- Keith and Moore Clinical Oriented Anatomy. VII edition Lippincot Williams and Wilkins.
- R.S Snell. Clinical Anatomy by systems. 9th edition Lippincot Williams and Wilkins.
- J.V. Basmajin. Grant's Method of Anatomy. 11th edition Williams and Wilkins.
- R.J. Last. Anatomy Regional and Applied. 12th edition Churchill Livingston.
- Lee McGregor's Synopsis of Surgical Anatomy, 12 edition Varghese Publishing House.
- Snell. Clinical anatomy by regions. VIII edition Lippincotts, Williams and Wilkins.

11. Hollinshed W Henry. Anatomy for surgeons. Vol. I-III, III edition, Lippincotts, Williams and Wilkins.
12. Vishram Singh. Clinical and Surgical Anatomy. Elsevier. Vol I-III, II edition
13. Vishram Singh. Textbook of general anatomy. Elsevier.
14. Frank H. Netter. Atlas of Human Anatomy. VIth edition Saunders Elsevier.

Histology

1. Young B. and Heath J. Wheater's Functional Histology. VI edition Churchill Livingstone.
2. M.H. E Ross. Histology: A textbook and atlas. VI edition Williams and Wilkins.
3. Difiore's. Atlas of histology with functional co-relation. 13th edition
4. Junqueira Basic histology - Text book and Atlas XI edition
5. Bloom and Fawcett. Text book of histology. XII edition. Saunders
6. Carlton's. Histology Technique.
7. E.C. Clayden. Practical of section cutting and staining.
8. D W Cormack. Ham's Histology. IX edition Lippincotts, Williams and Wilkins.
9. Netter's essentials of Histology II edition, Elsevier

Genetics

1. J.S Thompson and Thompson . Genetics in medicine. VIII edition W.B. Saunders and Co. Philadelphia, London.
2. George Fraser and Oliver Mayo. Text book of Human Genetics. Blackwell Scientific Publications London, Oxford Edinburg, Melbourne.
3. Hann Sellwerger and Jame Simpson. Chromosomes of Man. Sparsner's International Medical Publications.
4. Human Genetics SD Gangane, IV th edition, Elsevier
5. Emery's elements of medical genetics. XIVth edition

Embryology

1. Hamilton, Boyd. and Mossman. Human Embryology. IV edition
2. TW Sadler. Langman's Medical Embryology. Lippincotts, Williams and Wilkins. 13th edition
3. Keith L Moore and T.V.N. Persaud. The Developing Human. IX edition Saunders.
4. Larsen's Human embryology Schoenwolf, Bleyl, Brauer, Francis-West 7th edition
5. AK Datta Essentials of Human embryology 7th edition
6. Vishram singh Textbook of clinical Embryology 2nd edition

Neuroanatomy

1. Richard S. Snell. Clinical Neuroanatomy for Medical Students. VII edition Williams and Wilkins.
2. A. Parent. Carpenter's Human neuroanatomy. Williams and Wilkins.
3. Vishram Singh. Clinical Neuroanatomy. II edition Elsevier.
4. A. K. Dutta. Essentials of Neuroanatomy. IV edition Current books international.

5. John A. Kiernan. Barr's the human nervous system, Lippincott, Williams and Wilkins.

Statistics

1. David E. Matthews and Vernon T. Farewell. Using and Understanding Medical Statistics. 4th edition Karger.

Radiology

1. Human sectional Anatomy CT and MRI III Edition, Harold ELLIS
2. J.B. Walter et.al. Basic Atlas of Sectional Anatomy with correlated imaging. IV th Edition, Saunders Elsevier.
3. Text book of Radiology. Satish K Bhargava, Vth edition, CBS

Surface anatomy

1. SP John, Lumley, Surface Anatomy, The Anatomical basis of clinical examination. IV edition London: Churchill Livingstone.
2. A. Halim. and A.C. Das. Surface Anatomy III edition Lucknow. ASI, KGMC.

Comparative Anatomy

1. Banks Histology and Comparative Organology - A Text & Atlas - Edition 1974.
2. Wolstenhome, Taste & Smell in Vertebrates - Edition 1970.
3. Embryogenesis in Mammals CIBA foundation - Edition 1976.
4. George C. Kent, Comparative Anatomy of the Vertebrates - 3rd Edition, 1983 Mc. Graw Hill Book Company.
5. Romer, Vertebrate Body - 5th Edition, 1978, V.B. Saunders Company.

Physical Anthropology

1. Harrison, Human Biology an introduction to Human Evolution and Growth - 2['] Edition, 1970.
2. Poirie, Fossil Man, 1973.

Embalming Techniques

1. Jayavelu T., Embalming Techniques, Churchill Livingstone.
2. Ansari M.C., Embalming.
3. Embalming - Ajmani 1st edition 1998, J.P.Publishers.

Museum Techniques

1. Tompsett RH, Anatomical Techniques.
2. Edwards JJ, Medical Museum Techniques, Oxford University Press.

Journals

1. Journal of Anatomical Society of India.
2. Journal of Anatomy.
3. Acta Anatomica.
4. American Journal of Anatomy.
5. American Journal of Physical Anthropology.
6. Journal of Morphology, Embryology
7. Anatomical Record
8. American Journal of Medical Genetics.
9. Annual Review of Genetics

ADDITIONAL READING

1. Compendium of recommendations of various committees on Health and Development I. (1943-1975). DGHS, 1985 Central Bureau of Health Intelligence, Directorate General of Health Services, Ministry of Health and Family Welfare, Govt. of India, Nirmal Bhawan, New Delhi.
2. National Health Policy, Ministry. of Health & Family Welfare, Nirman Bhawan New Delhi , 1983.
3. Santosh Kumar, The elements of Research, writing and editing 1994, Dept. of Urology, JIPMER, Pondicherry.
4. Code of Medical Ethics framed under section 33 of the Indian Medical Council Act 1956. Medical Council of India, Kotla Road, New Delhi.
5. Srinivasa D.K et al, Medical Education Principles and Practice, 1995. National Technological Training Centre, JIPMER, Pondicherry.
6. Indian Council of Medical Research, "Policy Statement of Ethical consideration to involved in Research on Human Subjects", 1982, I.C.M.R., New Delhi.
7. Francis C.M, Medical Ethics, J P Publications, Iied. 2004.
8. Indian National Science Academy, Guidelines for care and use of animals in Scientific Research, New Delhi, 1994.
9. International Committee of Medical Journal Editors, Uniform requirements for manuscripts submitted to biomedical journals, N Engl J Med 1991.
10. Kirkwood B R, Essentials of Medical Statistics, 1' Ed., Oxford: Blackwell Scientific Publications 1988.
11. Mahajan B K. Methods in Bio statistics for medical students, 5th Edition, New Delhi, Jayp II Brothers Medical Publishers, 1989.
12. Raveendran, B Gitanjali, A Practical approach to PG dissertation, New Delhi J Publications, 1998.

Inclusion of different types of scopy's

- Ultrasound scanning
- CT scan
- PET Scan
- SPECT Scan
- Angiography
- Nuclear Scan
- Colour Doppler
- Endoscopy
- Colonoscopy
- Bronchoscopy
- Sigmoidoscopy
- Otoscopy
- Rhinoscope
- Ophthalmoscope
- Fundoscopy
- Laryngoscopy
- Gastroscopy
- Laparoscopy
- Colposcopy
- Hysteroscopy
- Cystoscopy
- Nephro Ureteroscopy

- Stem Cell Therapy
- Cloning



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