Faculty of Medicine

JSS ACADEMY OF HIGHER EDUCATION & RESEARCH
(DEEMED TO BE UNIVERSITY) MYSURU

JSS Academy of Higher Education & Research
(Deemed to be University)
Accredited "A" Grade by NAAC
Sri Shivarathreeshwara Nagar, Mysuru – 570 015

Regulation & Syllabus

Post Graduate Degree Programs

GENERAL SURGERY 2016

MS

Regulation & Syllabus

MS GENERAL SURGERY

2016

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REGULATION AND SYLLABUS FOR POST GRADUATE DEGREE PROGRAMS 2016

MS GENERAL SURGERY

CONTENTS

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 incase 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 examination. Not more than two examinations shall be conducted in an academic year.

12. Scheme of examination

MD/MS

Dissertation: Every candidate shall carryout 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 from 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 out comes to be assessed should include:

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

1. Personal Attitudes: The essential items are:

a) Caring attitude.

b) Initiative.

c) Organisational ability.

d) Potential to cope with stressful situations and undertake responsibility.

e) Trust worthiness and reliability.

f) To understand and communicate intelligibly with patients and others.

g) To behave in a manner that establishesprofessional 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 candi-date					
3.	Whether cross references have been consulted					
4.	Whether other relevant publications con-sulted					
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 otherrelevant 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:

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 - 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 follows logically from history and findings					
10.	Investigations required • Complete list • Relevant order • Interpretation of investigations					
11.	Ability to react to questioning Whether it follows logically from history and findings					
12.	Ability to defend diagnosis					
13.	Ability to justify differential diagnosis					
14.	Others					
	Total Score					

Check List - V

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Sl No		Strong Point	Weak Point
1.	Communication of the purpose of the talk		
2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The 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 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*

*** 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

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										

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 S GENERAL SURGERY

Goals

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

1. Practice surgery efficiently and effectively, backed by scientific knowledge and skill base.
2. Exercise empathy and a caring attitude and maintain high ethical standards.
3. Continue to evince keen interest in continuing surgical education irrespective of whether he is in a teaching institution or is a practicing surgeon.
4. Be a motivated `teacher' – defined as a surgeon keen to share his knowledge and skills with a colleague or a junior or any learner.

Objectives

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

1. Knowledge (cognitive domain).
2. Skills (psychomotor domain).
3. Human values, ethical practice and communication abilities.

1. Knowledge:

A list of objectives related to knowledge and higher cognitive abilities that are expected to be achieved during the course is given.
At the end of the training, the candidate must be able to:

a. Describe aetoiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies, in adults and children.

b. Describe indications and methods for fluid and electrolyte replacement therapy including blood transfusion.

c. Describe common malignancies in the country and their management including prevention.

d. Demonstrate understanding of basic sciences relevant to general surgery.

e. Identify social, economic, environmental and emotional determinants in a given case, and take them into account for planning therapeutic measures.

f. Recognize conditions that may be outside the area of his specialty/ competence and to refer them to the proper specialist.

g. Advice regarding the operative or non-operative management of the case and to carry out the management effectively.

h. Update himself by self-study, attending courses, conferences and seminars relevant to surgery.

i. Teach and guide his team, colleagues and other students.

j. Undertake audit, use information technology tools and carry out research, both basic and clinical, with the aim of publishing his work and presenting his work at various scientific fora.

2. Skills:

a. Take a proper clinical history, examine the patient, perform essential diagnostic procedures and order relevant tests and interpret them to come to a reasonable diagnosis about the surgical condition.

b. Perform minor operative procedures and common general surgical operations independently and the major procedures with help from a senior surgeon.

c. Provide basic and advanced life saving support services (BLS & ALS) in emergency situations manage acute abdominal emergencies and poly trauma.

d. Undertake thorough wound management, including burn wounds.

e. Undertake complete patient monitoring including the preoperative and post-operative care of the patient.

3. Human values, Ethical practice and Communication abilities:

a. Adopt ethical principles in all aspects of his surgical practice. Professional honesty and integrity are to be fostered. Surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.

b. Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.

c. Provide leadership and get the best out of his team in a congenial working atmosphere.

d. Apply high moral and ethical standards while carrying out human or animal research.

e. Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.

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

Essential Knowledge

The course contents have been identified and categorized as essential knowledge as under. This is to enable the student to achieve the objectives of the course. It is recognized that general surgery today mainly covers abdominal operations, thyroid and breast diseases. A general surgeon should also have knowledge of some common problems in allied specialties. Further he should be familiar with complications, current controversies and recent advances in these topics.

The topics are considered under:

1. Basic sciences,
2. General Surgery topics and
3. Specialty topics

Some overlap between the latter two categories is to be expected.

1. **Basic sciences** include anatomy, physiology, biochemistry, microbiology and pathology, as found in current text books. These standard topics are recommended to be studied in as much as they are applicable to the practice of surgery. The stress is on applied anatomy of the parts dealt with by the surgeon as defined by the skills list; patho-physiology and surgical pathology.

2. **General Surgery Topics** include the following:

    - History of Surgery
    - Fluids and Electrolyte balance/ Acid – Base metabolism
    - Wound Healing and Wound Management
    - Pathophysiology and Management of Shock
    - Principles of Operative Surgery: Asepsis, Sterilization and Antiseptics
    - Surgical Infections and Antibiotics
    - Nutrition and Metabolism
    - Principles of Burn Management
    - Principles of Oncology
    - Principles of Laparoscopy and Endoscopy
    - Haemostasis, Blood Transfusion
    - Trauma: Assessment of polytrauma, triage, basic and advanced trauma
    - Basic Principles of Anaesthesia 230
    - Informed Consent and Medicolegal Issues
    - Organ Transplantation
    - Molecular Biology and Genetics
    - Hernias: Types of hernias, repair techniques
    - Breast Diseases: Benign breast disorders, investigations, screening, genetics, Breast Cancer
    - Thyroid Disorders: Solitary nodule, investigations, multinodular goitre, Graves disease, malignancies.

PERI-OPERATIVE MANAGEMENT 1

Pre-operative Management

- Assessment of fitness for anaesthesia and surgery.
- Tests of respiratory, cardiac and renal function.
- Management of associated medical conditions, eg: diabetes; respiratory disease;
- Cardiovascular disease; malnutrition; anaemia; steroid, anticoagulant,
- Immunosuppressant and other drug therapy.

Infection:

- Pathophysiology of the body‘s response to infection.
- The sources of surgical infection - prevention and control.
- Surgically important micro-organisms.
- Principles of asepsis and antisepsis.
- Surgical sepsis and its prevention.
- Aseptic techniques.

- Skin preparation.
- Antibiotic prophylaxis.
- Sterilisation.

Investigative and Operative Procedures

- Excision of cysts and benign tumours of skin and subcutaneous tissue.
- Principles of techniques of biopsy.
- Suture and ligature materials.
- Drainage of superficial abscesses.
- Basic principles of anastomosis.

Anaesthesia

- Principles of anaesthesia.
- Pre-medication and sedation.
- Local and regional anaesthesia.
- Care and monitoring of the anaesthetised patient.

Theatre Problems

- Surgical technique and technology.
- Diathermy - principles and precautions.
- Lasers - principles and precautions.
- Explosion hazards relating to general anaesthesia and endoscopic surgery.
- Tourniquets - uses and precautions.
- Prevention of nerve and other injuries in the anaesthetised patient.
- Surgery in hepatitis and HIV carriers (special precautions).
- Disorders of coagulation and haemostasis (prophylaxis of thromboembolic disease).

PERI-OPERATIVE MANAGEMENT 2

Skin and Wounds

- Pathophysiology of wound healing.
- Classification of surgical wounds.
- Principles of wound healing.
- Incisions and their closure.
- Suture and ligature materials.
- Scars and contracture.
- Wound dehiscence.
- Dressings.

Fluid Balance

- Assessment and maintenance of fluid and electrolyte balance.
- Techniques of venous access. Course and Curriculum of M S Surgery
- Nutritional support - indications, techniques, total parenteral nutrition.

Blood

- Disorders of coagulation and haemostasis.

- Blood transfusion - indications, hazards, complications, plasma substitutes.
- Haemolytic disorders of surgical importance.
- Haemorrhagic disorders; disorders of coagulation.

Post-operative Complications

- Post-operative complications - prevention, monitoring, recognition, management.
- Ventilatory support - indications.

Post-operative Sequelae

- Pain control.
- Immune response to trauma, infections and tissue transplantation.
- Pathophysiology of the body‘s response to trauma.
- Surgery in the immuno-compromised patient.

TRAUMA

Initial Assessment and Resuscitation after Trauma

- Clinical assessment of the injured patient.
- Maintenance of airway and ventilation.
- Haemorrhage and shock.

Chest, Abdomen and Pelvis

- Cardiorespiratory physiology as applied to trauma.
- Penetrating chest injuries and pneumothorax.
- Rib fractures and flail chest.
- Abdominal and pelvic injuries.

Central Nervous System Trauma

- Central nervous system: anatomy and physiology relevant to clinical examination of the central nervous system; understanding of its functional disorders particularly those caused by cranial or spinal trauma; and interpretation of special investigations.
- Intracranial haemorrhage.
- Head injuries, general principles of management.
- Surgical aspects of meningitis.
- Spinal cord injury and compression.
- Paraplegia and quadriplegia - principles of management.

Special Problems

- Pre-hospital care.
- Triage.
- Trauma scoring systems.
- Traumatic wounds - principles of management.
- Gunshot and blast wounds.
- Skin loss - grafts and flaps.
- Burns.

- Facial and orbital injuries.

Principles of Limb Injury

- Peripheral nervous system - anatomy and physiology.
- Fractures - pathophysiology of fracture healing.
- Non-union, delayed union, complications.
- Principles of bone grafting. 232 Traumatic oedema, compartment and crush syndromes, fat embolism.
- Brachial plexus injury.

INTENSIVE CARE

Cardiovascular

- The surgical anatomy and applied physiology of the heart relevant to clinical cases.
- Physiology and pharmacological control of cardiac output, blood flow, blood pressure, and coronary circulation.
- Cardiac arrest, resuscitation.
- Monitoring of cardiac function in the critically ill patient, central venous pressure, pulmonary wedge pressure, tamponade, cardiac O/P measurements.
- The interpretation of special investigations.
- The management of haemorrhage and shock.
- Pulmonary oedema.
- Cardiopulmonary bypass - general principles, cardiac support.

Respiratory

- The surgical anatomy of the airways, chest wall, diaphragm and thoracic viscera.
- The mechanics and control of respiration.
- The interpretation of special investigations; lung function tests, arterial blood gases, radiology.
- The understanding of disorders of respiratory function caused by trauma, acute surgical illness and surgical intervention.
- Respiratory failure.
- Complications of thoracic operations.
- Adult respiratory distress syndrome.
- Endotracheal intubation, laryngotomy, tracheostomy.
- Artificial ventilation.

Multisystem Failure

- Multisystem failure.
- Renal failure - diagnosis of renal failure, complications of renal failure.
- GI tract and hepatic failure.
- Nutrition.

Problems in Intensive Care

- Sepsis, predisposing factors, organisms causing septicaemia.

- Complications of thoracic operations.
- Localised sepsis, pneumonia, lung abscess, bronchiectasis, empyema, mediastinitis.

Principles of ICU

- Indications for admission.
- Organisation and staffing.
- Scoring.
- Costs.

NEOPLASIA: TECHNIQUES AND OUTCOME OF SURGERY

Principles of Oncology

- Epidemiology of common neoplasms and tumour-like conditions; role of cancer registries.
- Clinico-pathological staging of cancer.
- Pathology, clinical features, diagnosis and principles of management of common cancers in each of the surgical specialties.
- Principles of cancer treatment by surgery, radiotherapy, chemotherapy, immunotherapy and hormone therapy.
- The principles of carcinogenesis and the pathogenesis of cancer relevant to the clinical features, special investigations, staging and the principles of treatment of the common cancers.
- Principles of molecular biology of cancer, carcinogenesis; genetic factors; mechanisms of metastasis.

Cancer Screening and Treatment

- The surgical anatomy and applied physiology of the breast relevant to clinical examinations, the interpretation of special investigations, the understanding of disordered function and the principles of the surgical treatment of common disorders of the breast.
- The breast: acute infections; benign breast disorders; nipple discharge; mastalgia. Carcinoma of breast; mammography; investigation and treatment.
- Screening programmes.

Techniques of Management

- Terminal care of cancer patients; pain relief.
- Rehabilitation.
- Psychological effects of surgery and bereavement.

Ethics and the Law

- Medical/legal ethics and medico-legal aspects of surgery.
- Communication with patients, relatives and colleagues.

Outcome of Surgery

- The evaluation of surgery and general topics.

- Decision-making in surgery.
- Clinical audit.
- Statistics and computing in surgery.
- Principles of research and design and analysis of clinical trials.
- Critical evaluation of innovations - technical and pharmaceutical.
- Health service management and economic aspects of surgical care.

LOCOMOTOR SYSTEM

Musculo-skeletal anatomy and physiology relevant to clinical examination of the locomotor system and to the understanding of disordered locomotor function, with emphasis on the effects of acute musculoskeletal trauma.

Effects of Trauma and Lower Limb

- Effects of acute musculo-skeletal trauma.
- Common fractures and joint injuries.
- Degenerative and rheumatoid arthritis (including principles of joint replacement).
- Common disorders of the lower limb.
- Amputations and prosthesis.

Infections and Upper Limb

- Common soft tissue injuries and disorders.
- Infections of bones and joints (including implants and prostheses).
- Pain in the neck, shoulder and arm.
- Common disorders of the hand, including hand injuries and infections.

Bone Disease and Spine

- Common disorders of infancy and childhood.
- Low back pain and sciatica.
- Metabolic bone disease (osteoporosis, osteomalacia).
- Surgical aspects of paralytic disorders and nerve injuries.

VASCULAR

The surgical anatomy and applied physiology of blood vessels relevant to clinical examination, the interpretation of special investigations and the understanding of the role of surgery in the management of cardiovascular disease

Arterial Diseases

- Chronic obliterative arterial disease.
- Amputations.
- Aneurysms.
- Carotid disease.
- Special techniques used in the investigation of vascular disease.
- Limb ischaemia: acute and chronic; clinical features; gangrene; amputations for vascular disease.
- Principles of reconstructive arterial surgery.
- Atherosclerosis
- Principles of Angioplasty/stenting

- Thrombolysis
- Reno-vascular disease
- Raynaud's/vasospastic disorders
- Lymphoedema
- Cerebrovascular disease
- Vasculitis
- Mesenteric ischaemia
- Graft prosthetics
- Graft surveillance
- Autonomic dysfunction
- Reperfusion injury
- Ischaemic limb Arterial trauma
- Hyper/hypo coagulable state
- Arteriography
- Continuous wave doppler
- Duplex ultrasound

Venous Diseases

- Vascular trauma and peripheral veins.
- Varicose veins.
- Venous hypertension, post-phlebitic leg, venous ulceration.
- Disorders of the veins in the lower limb.
- Deep venous thrombosis and its complications.
- Chronic ulceration of the leg.
- Thrombosis and embolism.

Lymphatics and Spleen

- Thromboembolic disease.
- Spleen; role of splenectomy; hypersplenism.
- Lymph nodes; lymphoedema.
- Surgical aspects of auto-immune disease.
- The anatomy and physiology of the haemopoeitic and lymphoreticular systems.
- Surgical aspects of disordered haemopoiesis.

HEAD, NECK and ENDOCRINE

The surgical anatomy and applied physiology of the head and neck relevant to clinical examination, the interpretation of special investigations, the understanding of disorders of function, and the treatment of disease and injury involving the head and neck.

The Head

- Laryngeal disease; maintenance of airway; tracheostomy.
- Acute and chronic inflammatory disorders of the ear, nose, sinuses and throat.
- Intracranial complications.
- Foreign bodies in ear, nose and throat.
- Epistaxis.
- Salivary gland disease.

- The eye - trauma, common infections.

Neck and Endocrine Glands

The surgical anatomy and applied physiology of the endocrine glands relevant to clinical examination, the interpretation of special investigations, the understanding of disordered function and the principles of the surgical treatment of common disorders of the endocrine glands.

- Pituitary
- Common neck swellings.
- Thyroid: role of surgery in diseases of the thyroid; complications of thyroidectomy; and the solitary thyroid nodule.
- Parathyroid; hyperparathyroidism; hypercalcaemia.
- Breast: Disease benign breast disorders; Malignant diseases of the breast
- Secondary hypertension.
- Adrenal cortex
- Adrenal medulla
- Gut as endocrine organ
- Endocrine pancreas and the management of:-
- Thyrotoxicosis
- Adrenal insufficiency
- Hyper/hypo thyroidism
- Carcinoid syndrome
- Counselling and screening in familial disease
- Anaesthetic and pharma-cological problems
- Radio-immuno assays
- Imaging techniques
- Histo/cyto pathology

Paediatric Surgical Disorders

- Neonatal physiology: the special problems of anaesthesia and surgery in the newborn; and the principles of neonatal fluid and electrolyte balance.
- Correctable congenital abnormalities.
- Common paediatric surgical disorders: cleft lip and palate; pyloric stenosis; intussusception; hernia; maldescent of testis; torsion; and diseases of the foreskin.
- RIF pain
- Testicular pain
- Paediatric trauma
- Burns
- Intussusception
- Pyloric stenosis
- Hirschprung‘s disease
- Ano-rectal anomalies
- Tracheo-oesophageal fistula
- Spina bifida
- Congenital small bowel obstruction
- Intestinal malrotation
- Associated anomalies
- Paediatric oncology
- Management of less complex abdominal trauma
- Hydrocephalus

ABDOMEN

The surgical anatomy of the abdomen and its viscera and the applied physiology of the alimentary system relevant to clinical examination, the interpretation of common special investigations, the understanding of disorders of function, and the treatment of abdominal disease and injury.

Abdominal Wall

Anatomy of the groin, groin and other ventral hernias, acute and elective; clinical features of hernias; complications of hernias.

- Anterior abdominal wall, anatomy, incisions, laparoscopic access. Acute Abdominal Conditions
- Peritonitis; intra-abdominal abscesses.
- Common acute abdominal emergencies.
- Intestinal obstruction; paralytic ileus.
- Intestinal fistulae.
- Investigation of abdominal pain.
- Investigation of abdominal masses.
- Gynaecological causes of acute abdominal pain.
- Pelvic inflammatory disease.
- Assessment of the acute abdomen
- Appendicitis and right iliac fossa pain
- Peritonitis
- Acute intestinal obstruction
- Intestinal pseudo-obstruction
- Biliary tract emergencies
- Acute pancreatitis
- Strangulated hernia
- Intestinal ischaemia
- Swallowed foreign bodies
- Gastrointestinal bleeding
- Toxic megacolon
- Superficial sepsis and abscesses
- Acute ano-rectal sepsis
- Ruptured aortic aneurysm
- Acute presentations of urological disease
- Acute presentations of gynaecological disease

Abdominal injury

- Assessment of the multiply injured patient
- Triage (major accidents)
- Battle triage and Field hospitals
- Initial management of head injuries.
- Closed abdominal injuries, especially splenic, hepatic and pancreatic injuries
- Closed chest injuries
- Stab and gunshot wounds
- Arterial injuries
- Injuries of the urinary tract
- Initial management of head injuries and interpretation of CT scans

- Initial management of severe burns

SMALL BOWEL AND COLORECTAL DISORDERS

- Neoplasms of large bowel
- Inflammatory bowel disease (inc. medical management)
- Diverticular disease
- Irritable bowel syndrome
- Haemorrhoids
- Anal fissure
- Rectal prolapse
- Acute appendicitis/RIF pain
- Intestinal obstruction
- Intestinal pseudo-obstruction 237

Intestinal ischaemia

- Peritonitis
- Large bowel and rectal injuries
- Anal tumours
- Pelvic autonomic nerves
- Screening for colorectal cancer
- Genetics of colorectal cancer
- Place of radiotherapy and chemotherapy in treatment
- Anorectal physiology
- Anorectal ultrasound
- Faecal incontinence
- Chronic constipation
- Intestinal fistulae
- Colonic bleeding
- Radiation enterocolitis
- Other small bowel conditions
- Colonic obstruction
- Colonic perforation

The use of staplers

LAPAROSCOPIC SURGERY

- Laparoscopic anatomy of the abdomen
- Diagnostic laparoscopy
- Physiology of pneumo-peritoneum Dangers of pneumoperitoneum
- Principles of diathermy
- Informed consent for laparo-scopic procedures
- Pre and post operative management of laparoscopic cases
- Port complications
- Technology of video imaging, cameras, insufflator etc.
- The methods of manipulation of images
- Laparoscopic instruments, clips, staplers and port types
- Management of equipment failure
- Ultrasound interpretation, internal and external techniques
- Recognition and management of laparoscopic complications
- Use and dangers of diathermy
- Anaesthetic problems in laparoscopic surgery
- Medico-legal implications of video-endoscopic surgery

- Theory and pracice of choledocho-scopy
- Theory of different forms of diathermy
- Laparoscopic ultrasound
- Advanced instrumentation and equipment
- Endoscopic suturing devices
- Theory, uses and dangers of lasers and other energy sources e.g. harmonic scalpel
- Creation and maintenance of new endoscopic spaces
- Use of assistance robots and robotic instruments

TRANSPLANTATION withspecial reference to RENAL AND HEPATIC DISEASE

- Pathology of renal and hepatic disease
- Patho-physiology of renal and hepatic failure
- Peritoneal- and haemo-dialysis
- Management of fluid and electrolyte disorders
- Selection of patients for transplantation 238
- Post-operative management
- Immuno-pathology of rejection
- Management of rejection
- Immunosuppression
- Opportunist infections
- Immunosuppression and cancer
- Transmission of viral and fungal diseases
- Tissue typing
- The HLA system
- Bladder dysfunction

HEPATOPANCREATOBILIARY SURGERY

- Gallstones and complications
- Biliary stricture
- Obstructive Jaundice
- Neoplasms of the Liver, Biliary Tract and Pancreas
- Pancreatitis, acute and chronic, complications
- Liver injuries
- Portal Hypertension
- Hydatid disease
- ESRD and Liver transplantation

UPPER GI TRACT

- Neoplasms of the upper GI tract
- Management of perforations of the upper GI tract
- Management of intestinal obstruction
- Management of GI bleeding
- Oesophageal motility disorders
- Oesophageal Strictures
- Gastro-oesophageal reflux and its complications
- Peptic ulceration and its complications
- Radiation enteritis
- Abdominal trauma

- Principles of screening for cancer
- The use and limitations of multimodality treatment for upper GI cancer
- Oesophageal motility disorders
- Other small bowel conditions
- Principles of Small bowel resection
- Sutured and stapled anastomoses
- Urinary Tract
- Urinary tract infection.
- Urinary Tract Obstruction
- Haematuria.
- Trauma to the urinary tract.
- Urinary calculi.
- Retention of urine.
- Urinary tract Neoplasms
- Disorders of prostate.
- Pain and swelling in the scrotum.
- Other Scrotal Lesions
- Testicular Neoplasms

NEUROSURGERY

- Cranial, spinal and peripheral nerve tumours
- Head Injury
- Spinal and peripheral nerve injuries
- Hydrocephalus
- Cerebrovascular Accidents
- Infections
- Recent advances

Cardiac and Thoracic Surgery

- Myocardial revascularisation
- Valvular Disorders
- Peripheral vascular disease
- Renovascular disease
- Secondary Hypertension
- Inflammatory Lung Disease
- Chest Wall lesions
- Thoracic Neoplastic Disease
- Chest Trauma
- Pleural Diseases

Orthopaedics

- Principles of Orthopaedic Trauma
- Casts and braces
- Nerve injuries
- Hand Infections
- Principles of Traction
- Amputations
- Principles of Rehabilitation
- Congenital Lesions
- Bone and Joint Infections

SKILLS

Objectives

1. To provide a comprehensive and structured training programme in general surgery and to enable trainees to achieve the training and experience necessary for independent practice.
2. The PG should be able to take proper history, conduct physical examination, perform or request for relevant investigations. He should be able to interpret these investigations to arrive at a working diagnosis.
3. Communicate with patient. Discuss operative plan, possible management options, postoperative complications etc and be able to take informed consent
4. Perform minor operative procedures and common major general surgical operations independently
5. Evaluate and manage trauma and acute surgical emergencies.
6. Undertake Critical care
7. Undertake wound management

Basic Ward Procedures

- Insertion of intravenous cannula, Nasogastric tube, urinary catheters
- Removal of Tubes and Drains
- Abdominal Paracentesis, Pleural Tap
- Venous Cutdown
- Wound dressings 240

ICU Procedures

- Insertion of CVP line, arterial lines, endotracheal intubation
- Intercostal Drainage
- Tracheostomy
- Knowledge of Ventilators and Monitors
- Prescribing TPN

Minor Surgical Procedures

- Hydrocele surgery, Lymph node biopsy, Excision of superficial swellings, Ingrowing toe nail, Circumcision, Banding of Haemrrhoids, Vasectomy

Minor Surgical Procedures

- Hydrocele surgery, Lymph node biopsy, Excision of superficial swellings, Ingrowing toe nail, Circumcision, Banding of Haemrrhoids, Vasectomy

Minor Surgical Procedures

- Hydrocele surgery, Lymph node biopsy, Excision of superficial swellings, Ingrowing toe nail, Circumcision, Banding of Haemrrhoids, Vasectomy

Routine: Open and laparoscopic Cholecystectomy, Groin Hernia Repair, Mastectomy, Breast Lump Excision, microdochectomy, Radical Duct Excision, Hemithyroidectomy, Laparotomy, Diagnostic laparoscopy, Thoracotomy, Cystogastrostomy, Suprapubic cystostomy, Hemicolectomy, Cysts and Sinuses of the Neck, Gastrostomy and feeding jejunostomy, Nephrectomy, Pyelolithotomy, Ureterolithotomy,

Orchidopexy, Skin grafting, Varicose vein surgery, vein harvesting, Lumbar Sympathectomy, Small bowel resection, Femoral herniorrhaphy, Umbilical and para umbilical hernia repair, Incisional and para-stomal hernia repair.

Emergency: Appendectomy, Laparotomy for intestinal Obstruction, Trauma Laparotomy, Splenectomy, Closure of Peptic Ulcer Perforation, Enteric Perforation, Resection-Anastamosis of bowel, Colostomy, Hemicolectomy, Amputations, Embolectomy, Tracheostomy, Obstructed Inguinal Hernia.

B) Assist/Observe

Vascular

- Reconstructive arterial surgery.
- Aneurysm Surgery

HEAD, NECK, ENDOCRINE AND PAEDIATRIC

The Head

- Parotidectomy, submandibular gland excision

Neck and Endocrine Glands

- Thyroidectomy, parathyroidectomy, congenital or developmental problems
- Adrenalectomy
- Surgery for endocrine pancreatic tumours

Paediatric Disorders

- Common paediatric surgical disorders: cleft lip and palate; pyloric stenosis; intussusception; hernia; maldescent of testis; torsion; and diseases of the foreskin.

ABDOMEN

- Sub-total colectomy
- Diagnostic laparoscopy
- Gastrectomy for bleeding
- Endoscopy for upper GI obstruction
- Laparotomy for perforated colon
- Suture of bleeding peptic ulcer
- Emergency cholecystectomy
- Exploration of scrotum for torsion
- Emergency hernia repair
- Laparotomy for abdominal
- Reduction of paraphimosis
- Laparotomy for small bowel injury
- Diagnostic peritoneal lavage
- Intestinal obstruction
- Splenic repair
- Hartmann‘s operation
- Operation for ruptured liver
- Pancreatic debridement
- Median sternotomy

Reconstructive Surgery

- Myocutaneous flaps
- Tissue expanders
- Breast reduction

Colorectal

- Therapeutic Endoscopy, colonoscopy
- Anterior resection of rectum
- AP resection of rectum
- Ileorectal anastomosis
- Panproctocolectomy
- Closure of Hartmann‘s
- Prolapse surgery
- Incontinence surgery
- Sphincter repair
- Recto-vaginal fistula
- Ileo-anal and colonic pouch
- Colo-anal anastomosis
- Operation for intestinal fistula
- Complex fistula-in-ano
- Posterior approach to rectum
- Block dissection of groin
- Operative cholangiography
- Laparoscopic suturing and knotting
- Nephrectomy
- Pyelo and ureterolithotomy
- Pyeloplasty
- Open prostatectomy 242 Laparotomy for acute abdomen
- Splenectomy
- Oesophageal dilatation
- Operations for upper GI bleeding
- Exploration of common bile duct
- Biliary bypass
- Formation of Roux-en-Y loop
- Oesophagectomy/total gastrectomy
- Pancreatectomy
- Liver resection
- Oesophagectomy
- Total and subtotal
- Gastrectomy
- Heller‘s myotomy
- Long oesophageal myotomy
- Pharyngeal pouch
- Repair of biliary stricture
- Whipple‘s procedure
- Pancreatectomy (distal and total)
- Drainage of infected pancreatitis
- Drainage of pancreatic pseudo-cyst
- Liver injuries
- Hydatid disease
- Porto-systemic shunt
- Vascular suture/anastomosis
- Control of venous bleeding

- Balloon thrombo-embolectomy
- Fasciotomy
- Artenal injuries
- Vascular access for dialysis

Essential Surgical Skills

Surgery is a skill-based discipline. The following list is drawn up with a view to specifying basic minimum skills to be acquired. While an attempt has been made to specify the year wise distribution of the learning of skills (in the latter part of this curriculum), it is recognized that the process is a continuous one. The principle of giving graded responsibility to the student is to be applied throughout the course. The year wise distribution of the skills recommended is to be used as general guideline. Some overlap may be there. Provision of training in various specialty subjects has been made during the second year of the course. Skills in specialty subjects may be acquired both during the specialty postings and during the general surgical postings in the parent department, if the procedures are carried out. The list within the tables, indicates the surgical procedures that the students should, by the end of the course, be able to perform independently (PI) by himself/herself or should have performed with assistance (PA) during the course. The other categories of surgical procedures mentioned form a general guide for the procedures that the student should either have observed (O) or have assisted the operating surgeon (A). Note, for all categories, the student washes up in the operating room. There may an overlap in the skill list between the general surgery list and the specialty list. Where different numbers are mentioned for the same/similar procedures between the general surgery and specialty lists, the higher number is applicable as the prescribed number. (Note that the total number is not the sum of the numbers mentioned for the same/similar procedures in the general surgery and specialty lists.)

Skills may be considered under the following headings.

1. Basic graduate skills.
2. Ward procedures.
3. ICU procedures.
4. Emergency room procedures.
5. Pre-operative workup procedures.
6. Post-operative procedures.
7. Minor surgical procedures.
8. Major operating room techniques.
9. General surgical procedures.
10. Specialty surgical procedures.

1. Basic graduate skills

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

Procedure	Category	Year	Number
Insertion of IV lines, nasogastric tubes, urinary catheters, etc.	PI	I	50

Minor suturing and removal of sutures.	PI	I	50
Removal of tubes and drains.	PI	I	50
Routine wound dressings.	PI	I	50

2. Ward Procedures

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

Procedure	Category	Year	Number
Abdominal paracentesis including diagnostic peritoneal lavage.	PI	I/II	5
Ability to teach UG's and interns.	PI	I	NA
Blood sampling — venous and arterial.	PI	I	NA
Bone marrow aspiration.	PI	I	2
Burns dressing.	PI	I/II	10
Communication skills with patients, relatives, colleagues and paramedical staff.	PI	I	NA*
Ordering of the requisite laboratory and radiological investigate ns and interpretation of the reports in light of the clinical picture.	PI	I	NA
Proficiency in common ward procedures.	PI	I	NA
Skills for per-rectal examination and proctoscopy.	PI	I	NA
Thoracocen tesis.	PI	I/II	5
Universal precautions against communicable diseases.	PI	I	NA
Venesection.	PI	I+II+III	5

NA: Not Applicable

3. ICU Procedures:

Procedure	Category	Year	Number
Insertion of arterial lines.	PI	II	10
Insertion of central venous lines.	PI	II	10

Insertion of endotracheal tubes.	PI	II	10
Insertion of peritoneal dialysis catheters.	A/PA	II, III	5
Intercostal drainage.	PI	II	5
Suprapubic puncture,stab cystostomy.	PI	II	5
Tracheotomy.	PI	I/II	2
Workingknowledge of ventilators and various monitors.	PI	I	NA
Interpretation of arterial blood gases.	PI	I	NA
Correction of electrolyte disturbances.	PI	I	NA
Prescribing parenteral & enteral nutrition.	PI	I	NA

4. Emergency Room Procedures

Procedure	Category	Year	Number
Application of splints for fractures.	PI	I	NA
Arterial and venous lines.	PI	I	NA
Assessment and initial management of polytrauma.	PI	I	NA
Cardiopulmonary resuscitation.	PI	I	NA
Management of airway obstruction.	PI	I	NA
Management of shock and cardiac / respiratory failure.	PI	I	NA
Recognition and initial management of surgical emergencies.	PI	I	NA
Suturing techniques.	PI	I/II	NA

5. Pre-operative Workup

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

6. Pre-operative care

Procedure	Category	Year	Number
Airway management.	PI	I	NA
Basic physiotherapy.	PI	I	NA
Management of epidural analgesia.	PI	I	NA
Management of fistulae.	PI	II	NA

Management of postoperative hypo and hypertension.	PI	I	NA
Postoperative pain control.	PI	I	NA
Skills for nutritional rehabilitation of patients.	PI	I	NA
Skills for proper fluid and antibiotic management.	PI	I	NA
Stoma care.	PI	I	NA

7. Minor OT procedures

Procedure	Category	Year	Number
Circumcision under local anesthesia.	PI	I	5
Drainage of abscesses.	PI	I	5
FNAC.	PI	I	5
Major dressings.	PI	I	20
Minor anorectal procedures (haemorrhoids: banding, cryotherapy, suturing etc, anal dilatation and fissures), fistulectomy.	PI	III	10
Minor biopsies: lymph node, ulcer, swellings etc.	PI	I	20
Reduction and plaster application of simple fractures and dislocations.	PA	II	10
Removal of simple subcutaneous swellings.	PI	I	10
Sigmoidoscopy and upper GI endoscopy (preferably in an endoscopy room).	PA/A/O	II	10
Suturing techniques.	PI	I	20
Vasectomy.	PI/PA	I	5
Wound debridement.	PI	I	10

8. Major Operating room techniques

Procedure	Category	Year	Number
Instrument arrangement and trolley layout	PA	1	NA
Skills in sterilization techniques, OT layout and asepsis.	0	I	NA
Skin preparation: painting and draping.	PI	I	NA
Techniques of scrubbing and gowning.	PI	I	NA

9. General Surgical Operative Procedures:

Procedure	Category	Year	Number
Appendicectomy.	PA	I	10
Appendicectomy.	PI	II/III	5
Cholecystectomy.	PI and PA	III	1 and 3
Closure of colostomy.	PA	III	2
Closure of peptic ulcer, under-running bleeding ulcer vagotomy drainage.	PI	III	

Colostomy.	PA	III	2
Cysts and sinuses of the neck.	PA	III	2
Diagnostic laparoscopy.	PA	III	3
Drainage of breast abscess, excision of breast lump.	PI	II	10
Groin hernia repair.	PI	II / III	5
Gynaecomastia.	PA	III	2
Haemorrhoidectomy, fissurectomy, simple fistulectomy.	See Minor OT procedures		
Hemicolectomy.	PA	III	1
Herniotomy, orchidopexy in children.	PA	III	3
Laparotomy for abdominal trauma, splenectomy.	PI	III	3
Laparotomy for intestinal obstruction, bowel resections, bowel anastamosis.	PI	III	3
Management of complex wounds.	PI		10
Mastectomy.	PA/A	III	2
Opening and closing the abdomen.	PI	I	5
Opening and closing the chest.	PI	III / III	1
Parotidectomy.	A	III	2
Release of bands and simple adhesive obstruction.	PI	II	5
Thyroid lobectomy.	PA	III	3
UGI endoscopy, flexible sigmoidoscopy.	AIO	11/11I	10
Ventilation.	PI		5
Wide excision of breast tumours, mastectomy, microdochectomy.	PA	III	3
Gastrostomy feeding jejunostomy.	PA	III	3

10. Speciality Procedure

There may be repetition of some of the procedures listed under this category and those listed under general surgical procedures. Where different numbers are mentioned for the same/similar procedures between the general surgery and specialty lists, the higher number is applicable as the prescribed number. (Note that the total number is not the sum of the numbers mentioned for the same/similar procedures in the general surgery and specialty lists.)

a. **Laparoscopy and GI Endoscopy**

Procedure	**Category**	**Year**	**Number**
Diagnostic and therapeutic Upper and Lower GI endoscopy.	PA	III	10
Diagnostic laparoscopy.	PA	III	3
Diagnostic upper GI endoscopy.	PA	III	10
Laparoscopic cholecystectomy.	A	III	3

b. **Neurosurgery**

Procedure	Category	Year	Number
Craniotomy.	A	II	2
Management of paraplegia.	A	II	2
Peripheral nerve repair.	A	II	2
Prevention of nerve injury: specific operations.	A	II	2
Suturing complex scalp wounds.	PI	II	2
Trephining.	PA	II	2

c. **Urology**

Procedure	Category	Year	Number
Carcinoma penis.	PA/A	II	3
Catheterization.	PI	I	NA
Circumcision.	PI	I	10
Diagnostic cystoscopy.	PA/A	II	3
Inguinal block dissection.	PA	1I	1
Meatotomy.	PI	II	3
Nephrectomy: partial / total.	A	II	3
Nephrolithotomy.	A	II	3
Orchidectomy.	PA/A	II	3
Orchidopexy.	A	II	3
Retroperitoneal lymph node dissection.	0	II/III	1
Supra pubic cystostomy.	PI	II	3
Total amputation of penis.	A	II	1
TUR / open prostatectomy.	A	II	5
Ureterolithotomy.	A	II	3
Urethral/ urogenital injuries.	A	II	3
Urethral dilatation.	PI	II	5
Varicocele.	PA/A	II	3
Vasectomy.	PI	I/II/III	10

d. **Oncology**

Procedure	Category	Year	Number
All radical operations: breast, thyroid, GI and facio-max malignancies.	A	II	2 each
Breast lumpectomy.	PI	II	5
Functional neck node dissection.	A	II	3
Gastrectomy, bowel resection.	A	II	3
Imprint cytology.	PA	II	3
Metastatic workup.	PA	II	5
Stoma care.	PI	II	5
Thyroid surgery.	A	II	5

U/s guided biopsy.	A/O	II	3

e. **Plastic Surgery**

Procedure	**Category**	**Year**	**Number**
Burn resuscitation.	PI	I	5
Lip surgery.	A	II	5
Local blocks in anaesthesia.	PI	I	10
Minor hand injuries (specify).	PI	II	5
Nerve repair.	A	II	2
Post excision reconstruction.	A	II	2
Reimplantation of digits.	0	II	1
Skin flap surgery.	0	II	2
Split skin graft.	PI	II	3
Stitch craft.	PI	I	NA
Tendon repair.	PA	II	2
Wound debridement.	PI	I	10

f. **Paediatric Surgery**

Procedure	**Category**	**Year**	**Number**
Anorectal anomalies.	A	II	2
Circumcision / meatoplasty.	PA	II	10
Herniotomy.	PA	II/III	2
Intercostal aspiration.	PI	II	2
Laparotomy for peritonitis.	PA	II	5
Lymph node biopsy.	PI	II/III	5
Non operative treatment of volvulus.	A/O	II	2
Orchidopexy.	PA/A	II	5
Ostomies.	PA	II	2
Paediatric emergencies.	A/PA	II	10
Pyloromyotomy.	PA/A	II/III	5

g. **Cardiothoracic Surgery**

Procedure	**Category**	**Year**	**Number**
Canulation of artery and vein.	A	II	2
Chest injuries.	PA	II /III	5
Empyema drainage,decortications.	PI	II	2
Endotracheal intubation.	PI	I	10
Intercostal drainage.	PI	I	5
ITU duties.	PI	I/III	NA
Lobectomies and pneumonectomies.	0	II	2
Oesophageal surgery.	0	II/III	2
Opening and closing the chest.	PA	II	2

Pericardiectomy.	0	II	2
Removal of FBs.	A	II/III	2
Removal of pulse generator (pacing).	PA/A	II	1
Rib resection.	PA	II/III	2
Tracheostomy.	PI	III	5
Undertake sternotomies.	PA	II/III	2
Vein and arterial harvesting.	PA/A	II/III	2
Ventilator management.	PA	I	10

h. **Vascular Surgery**

Procedure	**Category**	**Year**	**Number**
AV shunts for vascular access.	PA	II / III	2
Bypass graft; prosthetic.	A	II / III	2
Conservative amputations.	PI	II / III	5
Embolectomy.	PA	II / III	2
Post-traumatic aneurysms.	A	II / III	2
Sympathectomy.	PA	II / III	2
Use of heparin.	PI	II / III	10
Varicose vein surgery.	PI	II / III	2
Vascular suturing.	PA	II / III	2
Vein graft.	A/O	II / III	2
Vein patch repair.	A/O	II / III	2

Teaching and Learning Activities

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

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

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

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 programmes.
vi. Communication skills etc.

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

b. **Integrated Lectures:** These are recommended to be taken by

multidisciplinary teams for selected topics, eg. Jaundice, diabetes mellitus, thyroid etc.

2. **Journal Club:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter 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 (See checklist in chapter IV). 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 (See checklist in chapter IV). A timetable for the subject with names of the student and the moderator should be scheduled at the beginning of every year.

4. **Student Symposium: Recommended as an optional multi disciplinary programme.** 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 be done by rotation. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPCs.
7. **Inter Departmental Meetings:** ·Strongly recommended particularly with departments of pathology and radio-diagnosis at least once a week. these meetings should be attended by post graduate students and relevant entries must be made in the Log Book.

Pathology: *A* dozen interesting cases may be chosen and presented by the post graduate students and discussed by them as well as the senior staff of Surgery department. The staff of Pathology department would then show the slides and present final diagnosis. In these sessions the advance immuno-histo-chemical techniques, the burgeoning markers other recent developments can be discussed.

Radio-diagnosis*:* Interesting cases and the imaging modalities should be discussed.

8. **Teaching Skills:** Post graduate students must teach under graduate

students (eg medical, nursing) by taking demonstrations, bed side clinics, tutorials, lectures etc. Assessment is made using a checklist by surgery faculty as well students. (See model check in chapter IV). Record of their participation be kept in Log book. Training of post graduate students in educational science and technology is recommended.

9. **Continuing Medical Education Programmes (CME):** Recommended that at least state level CME programmes 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.

In the first year, during the morning session, student should work in the parent department. It is recommended that 2 years and 4 months are spent in general surgery and 8 months in allied and specialty departments. Depending on the time and opportunities available, some of the procedure listed for second year activity can be shifted either to the first or the third year. Students must be 'on call' on a regular basis. The total duration of postings in core and other specialities will be eight months.

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 surgery can be done in the respective departments.

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

Pathology: concurrent study. Recommend daily grossing sessions, weekly surgical pathology sessions and monthly CPCs.

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

Allied Specialty Training

Students are posted to core allied specialty subjects viz. anaesthesia and ICU for one month and orthopaedics including trauma (accident and emergency) for 2 months during the second year of training. Posting to the Department of Obstetrics and Gynaecology for one month is optional. This posting may be in lieu of one of the other specialities (except the core specialties) depending on the choice of the candidate.

Other Surgical Speciality Subjects

Postings to other speciality departments will be during the second year. The departments and duration of postings are as under:

Department	**Duration**
• Paediatric surgery	4 weeks
• Plastic surgery	4 weeks
• Cardiothoracic surgery	4 weeks
• Vascular surgery	4 weeks

- Neurosurgery 4 weeks
- Urology 4 weeks
- Oncology 4 weeks

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 post graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions.

Every candidate shall submit to the Registrar (Academic) 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:

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.

Our 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.

For some more details regarding Guide etc, please see chapter I and for books on research methodology, ethics, etc, see chapter IV.

Monitoring Learning Progress

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

/ learning activities. It may be structured and assessment be done using checklists that assess various aspects. checklists are given in chapter IV.
The learning out comes to be assessed should included: (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. Organisational ability.

   d. Potential to cope with stressful situations and undertake responsibility

   e. Trust worthiness and reliability.

   f. To understand and communicate intelligibly with patients and others.

   g. To behave in a manner which 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 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, in Chapter IV)

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

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

   d. **Surgical 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 Operative skills**

   a. **Day to Day work:** Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates'

sincerity and punctuality, analytical ability and communication skills (see model checklist III, chapter IV).

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

c. **Clinical and 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. (Table No 3, chapter IV)

4. **Teaching skills:** Candidates shou'd be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See model checklist V, chapter IV)

5. **Dissertation in the Department:** Periodic presentations are to be made in the department. Initially the topic selected is to be presented before submission to the Deemed to be University for registration, again before finalisation for critical evaluation and another before final submission of the completed work (See model checklist VI & VII, chapter IV)

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 programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

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

Log book

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

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

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

Scheme of Examination

a. **Theory:**

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 1: Basic sciences as applied to general surgery.
Paper 2: General Surgery including breast and gastroenterology
Paper 3: General Surgery including endocrinology &sub specialities
Paper 4: General Surgery including traumatology and recent advances
A minimum of fifty percent of marks aggregate and a minimum of forty percent per section will be required for a pass

Paper I: Basic Sciences -100 marks

1. Anatomy
2. Physiology
3. Other basic science topics covered in syllabus

Introduction to surgery, basic surgical principles, wounds, tissue repair and scars, critical care, fluid, electrolyte and acid-base balance; blood transfusion, nutritional support and rehabilitation, anaesthesia and pain relief; wound infection; special infections; acquired immunodeficiency syndrome (AIDS). Sterile precautions, transplantation; tumours, cysts, ulcers, sinuses; plastic and reconstructive surgery, skin lesions. Burns, arterial disorders, venous disorders. lymphatic system, day surgery; audit in surgery. surgical ethics.

Paper II: - 100 marks

Eye And orbit. Cleft lip and palate, developmental abnormalities of the face, palate, jaws and teeth; maxillofacial injuries; nose and sinuses; ear; oral and oropharyngeal cancer and pro cancer; salivary gland disorders; pharynx, larynx and neck.

Anastomoses, esophagus, stomach and duodenum, liver, spleen. Gallbladder and bile ducts, pancreas, peritoneum, omentum, mesentery and retroperitoneal space; small and large intestines, intestinal obstruction, vermiform appendix, rectum, anus and anal canal; hernias, umbillicus, abdominal wall; principles of laparoscopic surgery.

Congential disorders of breast , benign disorders of breast , carcinoma breast

Paper III: - 100 marks

Endocrinology(pituitary gland, thyroid gland and the thyroglossal tract ; parathyroid and pancreas and adrenal glands and other abdominal endocrine disorders) and subspecialities(urology, oncology, neurosurgery, plastic surgery, cardiothoracic and vascular surgery, paediatric surgery)

Paper IV: - 100 marks

Traumatology including to orthopaedic and general surgical trauma and re-

cent advances

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

WEIGHTAGE OF MARKS IN EACH PAPER

PAPER – I – BASIC SCIENCES AS APPLIED TO GENERAL SURGERY

This will consist of ten short essay questions each carrying ten marks. There will be three questions in Anatomy, three in Pathology and one short essay question each in Pharmacology, Physiology, Biochemistry and Microbiology

PAPER – II – GENERAL SURGERY INCLUDING BREAST AND GASTROENTEROLOGY

General Surgery + Breast - 30%
Gastroenterology - 70%

PAPER – III – GENERAL SURGERY INCLUDING ENDOCRINOLOGY AND SUB –SPECIALTIES

General Surgery + Endocrinology - 50%
Sub-specialties - 50%

PAPER – IV – GENERAL SURGERY INCLUDING TRAUMATOLOGY AND RECENT ADVANCES

General Surgery + Traumatology - 50%
Recent advances - 50%

Paper – II, Paper – III & Paper – IV shall consists of 2 Long Essay questions carrying 20 marks each. 3 Short Essay questions carrying 10 marks each and 6 Short Questions carrying 5 marks each.

Total marks for each paper will be 100.

a. **Clinical examination:**

Time – 8.00am to 5.00pm **Max.Marks = 200**

Cases are selected by External Examiners and are allotted in the presence of External Examiners. The cases allotted are:

CASES	**NO**	**MARKS**	**TIME FOR**	
			Examination	Discussion
1 LONG CASE	01	100	45 Mins	30 – 45 mins
2 SHORT CASES				
Short case - 1	01	40	15 mins	15 – 20 mins

Short case – 2	01	40	15 mins	15 – 20 mins
Total	03	180 Marks	1 Hour 15 mins	60 – 85 mins

Cases will be evaluated by all 4 Examiners.

OSCE **20 Marks**

(4 Stations of 05 marks each)

4 Stations will be testing knowledge, understanding, data interpretation, problem solving, history taking, examination, counseling, resuscitation or procedures out of which one will be an observed station.
Maximum of 5 mins will be provided for each session.
Written instructions will be provided about each station to the students.
Check list for each station will be provided to the examiners to assign marks.

b. **Viva voce** **- 100 marks**

1. Viva-voice Examination: (80 marks)

All examiners will conduct viva-voice conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents. In addition candidates may be also be given case reports, charts, gross specimens, histo pathology slides, X-rays, ultrasound, CT scan images, etc., for interpretation. Questions on operative surgery and use of instruments will be asked. It includes discussion on dissertation also.
Will be conducted at 4 stations by all 4 examiners for 20 marks each.

The stations are as follows:

STATION – 1 - INSTRUMENTS
STATION – 2 - OPERATIVE SURGERY
STATION – 3 - SURGICAL PATHOLOGY
STATION- 4 - X-RAYS, C.T. MRI & ULTRA SOUND

2. Pedagogy Exercise: (10 marks) A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.
3. Log book(10 MARKS)

At the end of 1st year, 2nd year and 3 months before final examination, the Logbook will be evaluated considering the following parameters:

1. ills and procedures learned independently, under supervision or assisted by him.
2. Presentations in Journal Clubs.
3. Cases presented in clinical meetings.
4. Presentation in departmental seminars.
5. Intra and Interdepartmental training and evaluation details.
6. Teaching activities.
7. Conferences / Workshops / CME attended.
8. Papers presented / Published conference.
9. Thesis progress and evaluation details

4. Distribution of Marks:

Maximum marks for M S General Surgery	Theory	Practical	Viva	Grand Total
	400	200	100	700

Recommended books and Journals

Text books

1. Charles V. Mann, R.C.G. Russell, Norman S. Willians, Bailey and Love's Short Practice of Surgery, 23rd Edition, 2000, Chapman & Hall
2. David C. Sabiston : Text book of Surgery : The Biological Basis of Modem Surgical Practice, 15th Edition, 1971, W.B. Saunders
3. Seymour I. Schwarts, G. Tom Shines, Frank C. Spencer, Wendy Cowles Husser: Principles of Surgery, Vol. 1 & 2, 7th Edition, 1999, Mc.Graw Hill
4. JSP Lumley: Hamilton Bailey's Physical Signs, 18th Edition, 1997, Butterworth/Heinemann.
5. R.W.H. McMinn : Last's Anatomy : Regional and Applied, 10th Edition, 1999, Churchill Livingstone
6. Sir Charles Illingworth, Bruce M. Dick, A Text Book of Surgical Pathology, 12th Edition, 1979, Churchill Livingstone.
7. K. Das : Clinical Methods in Surgery, 8th Edition, 1968, Suhas Kumar Dhar Calcutta
8. R.F. Rintoul : Farqharson's Text Book of Operative Surgery, 8th Edition, 1995, Churchill Livingstone
9. Somen Das: A practical Guide to Operative Surgery, 4th Edition, 1999, S. Das, Calcutta.
10. Pankaj Patel, V.V. Dewoodkar, Handbook of Surgical Instruments for Undergraduates, 1992, Bhalani publishing, House
11. R.A. Jamieson and A.W. Kay: Text book of Surgical Physiology, Lavingstone.
12. James Kyle : Pye's Surgical Handicraft, Indian Edition, K.M. Varghese Company

Reference text books

1. William F. Ganong : Review of Medical Physiology, 2000, Lange Medical Publication
2. Roshan Lall Gupta : Year Book of Surgery, (Series) Jaypee Brothers
3. Roshan Lall Gupta : Recent advances in Surgery, (Series) Jaypee Brothers
4. I Taylor and C.D. Johnson: Recent Advances in Surgery, (Series) Churchill Livingstone.
5. Lloyd M. Nyhus, Robert J.Baker and Joseph E. Fischer : Mastery of Surgery Vol. 1 &2,3rd Edition, 1997, Little Brown & Company
6. Peter J.Morris and Ronald A Malt : Oxford Text Book of Surgery, Vol. 1 & 2, 1994, Oxford University Press
7. Charles Rob and Rodney Smith: Operative Surgery (All Volumes), 2nd Edition, 1971, Butterworths.
8. C.Palanivelu : Art of Laparoscopic Surgery, 1999, Paras Publishing
9. Michael J. Zinner, Seymour I. Schartz and Haroid Ellis : Maingot's abdominal operations, Vol. 1 & 2, 10th Edition, 1997, Prentice Hall International
10. Kevin G. Burnand and Anthony E. Young : The New Aird's companion to surgical studies, 1992, Curchill Livingstone
11. Guyton: Text Book of Medical Physiology, 9th Edition, 1998, W.B. Saunders.
12. Hamilton Bailey : Emergency Surgery, 1999, Butterwoth

13. Cuschiery : Essentials of Surgical Practice, 3rd Edition, 1995, K.M. Verghese Company
14. Goliger : Surgery of the Anus, Ractum and Colon
15. Lee Mcgregor : Synopsis of Surgical Anatomy, 12th (Indian) Edition, 1998, K.M. Verghese Company
16. W.T. Irvine : Modern Trends in Surgery, Series, Butterworths

Journals for reference

- Indian Journal of Surgery
- British Journal of Surgery
- American Journal of Surgery
  Surgery International
- New England Journal of Medicine
  Surgery, Gynaecology & Obstetrics
- Year Book of Surgery
- Surgical Clinics of North America
- Lancet
- British Medical Journal
- Urological Clinics of North America
- Indian Journal of Medical Research

Additional reading

1. Compendium of Recommendations of Various Committees on Health and Development (1943-1975) DGHS, 1985Central Bureau of Health Intelligence, Directorate General of Health Services, Min. Of Health and Family Welfare, Govt. Of Indian, Nariman Bhawan, New Delhi, P – 335
2. National Health Policy: Min. of Health & Family Welfare, Nirman Bhawan, New Delhi, 1983
3. Samosh Kumar: The Elements of Research, writing and editing 1994, Dept. Of Urology, JIMPER, Pondicherry
4. Srinivasa D Ketal: Medical Education Principles and Practice, 1995. National Teacher Training Centre, JIPMER, Pondicherry
5. Indian Council of Medical Research: "Policy Statement of Ethical considerations involved in Research on Human Subjects", 1982, I.C.M.R., New Delhi.
6. Code of Medical Ethics framed under section 33 of the Indian Medical Council Act, 1956. Medical Council of India, Kotla Road, New Delhi.
7. Francis C M: Medical Ethics, Jaypee Publications, Bangalore, 1993.
8. Indian National Science Academy, Guidelines for care and use of animals in Scientific Research, New Delhi, 1994.
9. Internal National Committee of Medical Journal Editors, Uniform requirements for manuscripts submitted to biomedical journals, N Engl J Med 1991, 424-8
10. Kirkwood B.R.: Essentials of Medical Statistics, 1St Ed., Oxford, Blackwell Scientific Publications 1988.
11. Mahaian B.K.: Methods in Bio-statistics for Medical Students, Stn Edition, New Delhi, Jaypee Brothers Medical Publishers, 1989.
12. Raveendran B Gitanjali: A Practical approach to PG dissertation, New Delhi, Jaypee Publications, 1998.
13. R.K. Chaube: Consumer Protection Act and Medical Profession, 1St Edition, 1999, Jaypee Brothers.

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