Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore.

Regulations for Post Graduate Degree and Diploma Courses in Medical Sciences

Chapter I

1. Branches of Study

1.1 Postgraduate Degree Courses

The following courses of studies may be pursued.

A. *M.D. (Doctor of Medicine)*

1. Anaesthesiology
2. Aviation Medicine
3. Anatomy
4. Biochemistry
5. Community Medicine
6. Dermatology, Venereology and Leprosy
7. Forensic Medicine
8. General Medicine
9. Microbiology
10. Pathology
11. Paediatrics
12. Pharmacology
13. Physiology
14. Psychiatry
15. Radio-diagnosis
16. Radio-therapy
17. Tuberculosis & Respiratory Medicine

and such other subjects as might have been introduced by the Universities in Karnataka prior to commencement of Health University i.e., 1.6.1996, or recognised by Medical Council of India.

B. M.S. (Master of Surgery)

1. General Surgery
2. Obstetrics and Gynecology
3. Ophthalmology
4. Orthopedics
5. Oto-Rhino-Laryngology

and such other subjects as might have been introduced by the Universities in Karnataka prior to commencement of Health University i.e., 1.6.1996, or recognised by Medical Council of India.

C. D.M. (Doctor of Medicine)

In the subjects recognised by Medical Council of India.

D. M.Ch (Master of Chirurgie)

M.Ch. Urology

1.2 Postgraduate Diploma Courses

Post graduate diploma course may be pursued in the following subjects:
Child Health (D.C.H.), Obstetrics and Gynaecology (D.G.O.), Otorhinolaryngology (D.L.O.), Ophthalmology (D.O.), Orthopaedics (D.Ortho), Anaesthesiology (D.A.), Clinical Pathology (D.C.P.), Microbiology (D. Micro), Public Health (D.P.H), Forensic Medicine (D.F.M.), Dermatology, Venerology and Leprosy (D.D.V.L.), Psychiatry (D.P.M.), Radio-Diagnosis (DMRD), Radio-therapy (DMRT), Tuberculosis and Chest Diseases (D.T.C.D.) and such other subjects as might have been introduced by the Universities in Karnataka prior to commencement of Health University i.e., 1-6-1996, and recognised by Medical Council of India.

2. Eligibility for Admission

2.1 MD / MS Degree and Diploma Courses: A candidate affiliated to this university and who has passed final year M.B.B.S. examination after pursuing a study in a medical college recognised by the Medical Council of India, from a recognised Medical College affiliated to any other University recognised as equivalent thereto, and has completed one year compulsory rotating internship in a teaching Institution or other Institution recognised by the Medical Council of India, and has obtained permanent registration of any State Medical Council shall be eligible for admission.

2.2 D.M and M.Ch Courses

D.M.: Candidate seeking admission for D.M courses in any subject must posses recognised degree of MD (or its equivalent recognised degree) in the subject specified in the regulations of the Medical Council of India from time to time.

M.Ch : Candidate seeking admission for M.Ch course in any subject must posses recognised degree of MS (or its equivalent recognised degree) in the subject specified in the regulations of the Medical Council of India from time to time.

3. Obtaining Eligibility Certificate by the University before making Admission

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

1 MBBS and MS pass / degree certificate issued by the University.
2 Marks cards of all the university examinations passed MBBS course.
3 Attempt Certificate issued by the Principal.

4 Certificate regarding the recognition of the medical college by the Medical Council of India.
5 Completion of internship certificate.
6 In case internship was done in a non-teaching hospital, a certificate from the Medical Council of India that the hospital has been recognised for internship.
7 Registration by any State Medical Council and
8 Proof of SC/ ST or Category I, as the case may be.

Candidates should obtain the Eligibility Certificate before the last date for admission as notified by the University.

A candidate who has been admitted to postgraduate course should register his / her name in the University within a month of admission after paying the registration fee.

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

5. Duration of Study

a) M.D /M.S Degree Courses

The course of study shall be for a period of 3 years consisting of 6 terms.

b) D.M /M.Ch

The courses of study shall be for a period of 3 years consisting of 6 terms.

c) Diploma courses:

The course of study shall be for a period of 2 years consisting of 4 terms.

5.2 Requirement to complete the course -- deleted *

6. Method of training

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

7. Attendance, Progress and Conduct

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

*** deleted vide university notification No. UA/ORD-6/1999-2000 dated 9.4.2001**

7.2 Each year shall be taken as a unit for the purpose of calculating attendance.

7.3 Every student shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentation, clinics and lectures during each year as prescribed by the department and not absent himself / herself from work without valid reasons.

7.4 Every candidate is required to attend a minimum of 80% of the training during each academic year of the postgraduate course. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% attendance of training period every year.

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

8. Monitoring Progress of Studies

8.1 Work diary / Log Book - Every candidate shall maintain a work diary and record of his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. (please see Chapter IV for model checklists and logbook specimen copy). Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate. The work diary shall be scrutinised and certified by the Head of the Department and Head of the Institution, and presented in the university practical/clinical examination.

8.2 Periodic tests:

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

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

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

9. Dissertation *

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

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

9.3 Every candidate shall submit to the Registrar (Academic) of the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within six months from the date of commencement of the course on or before the dates notified by the University. The synopsis shall be sent through the proper channel.

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

9.5 The dissertation should be written under the following headings:

i. Introduction
ii. Aims or Objectives of study
iii. Review of Literature
iv Material and Methods
v. Results
vi. Discussion
vii. Conclusion
viii. Summary
ix References
x. Tables
xi. Annexures

9.6 The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other 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.

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

*** Note: For M.Ch. course, this clause is not applicable.**

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

9.9 Guide: The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work is as per Medical Council of India Minimum Qualifications for Teachers in Medical Institutions Regulations, 1998. Teachers in a medical college/institution having a total of eight years teaching experience

out of which at least five years teaching experience as Lecturer or Assistant Professor gained after obtaining postgraduate degree shall be recognised as post graduate teachers.

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

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

10. Schedule of Examination

The examination for M.D / M.S courses shall be held at the end of three academic years (six academic terms). The examination for D.M and M.Ch courses shall be held at the end of three years. The examination for the diploma courses shall be held at the end of two academic years (four academic terms). The university shall conduct two examinations in a year at an interval of four to six months between the two examinations. Not more than two examinations shall be conducted in an academic year.

11. Scheme of Examination

11.1 M.D. / M.S. Degree

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

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

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

11.1.3 Practical / Clinical Examination:

In case of practical examination, it should be aimed at assessing competence and skills of techniques and procedures as well as testing students ability to make relevant and valid observations, interpretations and inference of laboratory or experimental work relating to his/her subject.

In case of clinical examination, it should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine at least one long case and two short cases.

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

11.1.4 Viva Voce: Viva Voce Examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. The total marks shall be 100 and the distribution of marks shall be as under:

(i) For examination of all components of syllabus	80 Marks
(ii) For Pedagogy	20 Marks

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

11.1.6 Criteria for declaring as pass in University Examination: A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory, (2) Practical including clinical and viva voce examination.

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

11.1.7 Declaration of distinction: A successful candidate passing the University examination in first attempt will be declared to have passed the examination with distinction, if the grand total aggregate marks is 75 percent and above. Distinction will not be awarded for candidates passing the examination in more than one attempt.

11.2 D.M / M.Ch:

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

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

11.2.2 Practical / Clinical Examination:

In case of practical examination it should be aimed at assessing competence, skills of techniques and procedures as well as testing students ability to make relevant and valid observations, interpretence and experimental work relevant to his / her subject.

In case of clinical examination it should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine at least one long case and two short cases.

The maximum marks for Practical / Clinical shall be 200.

11.2.3 Viva Voce: Viva Voce examination shall aim at assessing thoroughly depth of knowledge, logical reasoning, confidence and oral communication skills. The maximum marks shall be 100.

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

11.2.5 Criteria for declaring as pass in University Examination: A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory, (2) Practical including clinical and viva voce examination.

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

11.3 Diploma Examination:

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

11.3.1 Theory: There shall be three written question papers each carrying 100 marks. Each paper will be of three hours duration. In clinical subjects one paper out of this shall be on basic medical sciences. In basic medical subjects and para clinical subjects, questions on applied clinical aspects should also be asked.

11.3.2 Practical / Clinical Examination:

In case of practical examination it should be aimed at assessing competence, skills related to laboratory procedures as well as testing students ability to make relevant and valid observations, interpretation of laboratory or experimental work relevant to his/her subject.

In case of clinical examination, it should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine at least one long case and two short cases.

The maximum marks for practical / Clinical shall be 150.

11.3.3 Viva Voce Examination: Viva Voce examination should aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. The total marks shall be 50.

11.3.4 Criteria for Pass: Criteria for declaring as pass in University Examination: A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory, (2) Practical including clinical and viva voce examination.

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

11. 3.5 Declaration of distinction: A successful candidate passing the University examination in first attempt will be declared to have passed the examination with distinction, if the grand total aggregate marks is 75 percent and above. Distinction will not be awarded for candidates passing the examination in more than one attempt.

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

12. **Number of Candidates per day.** The maximum number of candidates for practical/clinical and viva-voce examination shall be as under:

MD / MS Course: Maximum of 6 per day
Diploma Course: Maximum of 8 per day
DM / M.Ch Course: Maximum of 3 per day

Chapter II

GOALS AND GENERAL OBJECTIVES OF POSTGRADUATE MEDICAL EDUCATION PROGRAM

GOAL

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

(i) who shall recognise the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy;

(ii) who shall have mastered most of the competencies, pertaining to the specialty, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system;

(iii) who shall be aware of the contemporary advances and developments in the discipline concerned;

(iv) who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology; and

(v) who shall have acquired the basic skills in teaching of the medical and paramedical professionals?

GENERAL OBJECTIVES

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

i) Recognise the importance of the concerned specialty in the context of the health need of the community and the national priorities in the health sector.

ii) Practice the specialty concerned ethically and in step with the principles of primary health care.

iii) Demonstrate sufficient understanding of the basic sciences relevant to the concerned specialty.

iv) Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive and promotive measures/strategies.

v) Diagnose and manage majority of the conditions in the specialty concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.

vi) Plan and advise measures for the prevention and rehabilitation of patients suffering from disease and disability related to the specialty.

vii) Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation.

viii) Demonstrate empty and humane approach towards patients and their families and exhibit interpersonal behaviour in accordance with the societal norms and expectations.

ix) Play the assigned role in the implementation of national health programmes, effectively and responsibly.

x) Organise and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.

xi) Develop skills as a self-directed learner, recognise continuing educational needs; select and use appropriate learning resources.

xii) Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyse relevant published research literature.

xiii) Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.

xiv) Function as an effective leader of a 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 PG CURRICULUM

The major components of the PG curriculum shall be:

- Theoretical knowledge
- Practical/clinical Skills
- Training in Thesis (Not applicable to DM and M.Ch. courses)
- Attitudes, including communication.
- Training in research methodology.

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

Annexure to University Notification No: No. UA/ORD-06/1999-2000, dated, 01.01.2000

Chapter III

Course Description

Goals

1. To train doctors in the scientific and clinical aspects of the specialty of Urology.
2. To empower them to practice the specialty of Urology with competence, care, and compassion thereby delivering the highest standard of Urologic care to the community.
3. To empower the trainee in Academic and Research aspects of Urology; to empower the trainee to become an effective Teacher and Communicator in Urology.
4. To establish the required training methods, evaluation methodology, and qualifying norms for the successful completion of the M.Ch. course in Urology.

Note

Urology *shall at the present time include the areas of* ***General Urology, Endourology, Paediatric Urology, Urologic Oncology, Reconstructive Urology, Genitourinary Trauma, Female Urology, Neuro-urology and Incontinence, Andrology & Reproductive Urology, Renal Transplantation*** *and such other fields as may form part of the specialty of Urology in its future evolution.*

Statement of Objectives

1. To provide the candidate with the current, latest, scientific and evidence-based ***Knowledge*** pertaining to the above-mentioned areas in Urology.

2. To impart the ***Skills*** to undertake independent clinical practice in the above areas of Urology and to provide opportunities to the practice of these skills in a graded manner and under suitable supervision to a point where the candidate is capable of practising these skills independently.

3. To inculcate in the candidate an ***Attitude*** of responsibility, accountability and caring; to empower the candidate with a good and sound foundation of ***Ethical Values*** in the practice of Urology; and to develop in the candidate the ability to effectively ***Communicate*** with patients, peers, superiors, and the community in the discharge of his/her clinical role.

Course Content

1. The predominant course related activity would involve working in the hospital – OPD's, Wards, Operation Theatres, and affiliated Laboratories, Diagnostic facilities etc.
2. Didactic teaching activities will include Lectures, Seminars, Clinical Presentations, Journal Clubs, etc.
3. Practical teaching and learning activities will involve Case Presentations, Demonstrations, Imaging and Diagnostic Procedures and such other related activities.
4. Additional teaching and learning activities will include:
    a. Visits to other Institutions of Excellence.
    b. Visits to Laboratories, Diagnostic Facilities, Rehabilitation units, Community-based units and such other areas as may be deemed necessary from time to time.
    c. Attending Continuing Education Programmes, Seminars, Conferences, Workshop etc., in furtherance of the course objectives.
    d. Presenting Papers, Topics, Lectures, Posters, and similar activities to peer groups in furtherance of the learning objectives of the course.

The following is a general list of topics to be covered during the course. This list is only representative, and any topic relevant to the science of Urology may be included. Teaching, learning & evaluation will, therefore, not be confined to, but shall include the topics listed below.

BASIC SCIENCES AS APPLIED TO UROLOGY

1. Surgical Anatomy of Genito-urinary Tract and Retroperitoneum
2. Normal Renal Physiology
3. Renal Biochemistry – Acid base and fluid regulation
4. Renal Endocrinology
5. Physiology & Pharmacology of Renal Pelvis & Ureter
6. Physiology of Urinary Bladder
7. Genetic determinants of Urologic Diseases
8. Pathophysiology of Urinary Tract Obstruction
    a. Upper Urinary Tract
    b. Lower Urinary Tract

9. Embryology & Normal Development of the Genito-urinary tract
10. Embryology of Congenital Anomalies of the G.U. Tract
    a. Vesico-Ureteric Reflux, Mega Ureter & Ureteral Re-implantation
    b. Ectopic Ureter & Ureterocoele
    c. Exstrophy of the Bladder, Epispadias & other Bladder Anomalies
    d. Cloacal Malformations
    e. Prune Belly Syndrome
    f. Posterior Urethral Valves & other Urethral Anomalies
    g. Hypospadias
    h. Congenital Anomalies of Testes

11. Renal Function in Foetus & Neonates
12. Renal Dysplasia & Cystic disease of Kidney
13. Disorders of Sexual Differentiation
14. Normal and abnormal spermatogenesis
15. Urologic Examination & Diagnostic Techniques – Imaging of the G.U. Tract
    a. Conventional Radiography of Urogenital system and Retro-peritoneal area
    b. Urologic Ultrasonography
    c. Excretory & Retrograde Pyelography
    d. Conventional Lower Urinary Tract Radiography
    e. CT, MRI, Angiography and other Imaging modalities

16. Radionuclide studies in Urology
17. Pathologic Techniques in Urology
    a. Urine Analysis
    b. Urinary Cytology
    c. Flow Cytometry
    d. Fine Needle Aspiration Cytology (FNAC)
    e. Needle Biopsy
    f. Immunohistochemistry and other relevant Special Techniques
18. Urinary tract changes in Pregnancy and Puerperium
19. Overview of Genital and Urinary Tract Pathogens

Infections & Inflammations of G.U. Tract

1. Host Defence Mechanisms against Urinary Tract Infections
2. Bacterial infections of the Urinary tract – Diagnosis & Management
3. Urinary Tract Infections in Pregnancy – Screening, Evaluation & Management
4. Management of Acute & Chronic Pyelonephritis, Emphysematous Pyelonephritis
5. Approach to Management of Urinary Tract Infection in Infants & Children
6. Diagnosis & Management of Prostatitis & Related disorders
7. Diagnosis & Management of Sexually transmitted diseases
8. Diagnosis & Management of Cutaneous diseases of External Genitalia
9. Diagnosis & Management of Parasitic diseases of G.U. Tract
10. Diagnosis & Management of Fungal infections of Urinary Tract
11. Diagnosis & Management of Genito-Urinary Tuberculosis
12. Management of Fournier's Gangrene and Other Soft Tissue Infections
13. Diagnosis and Management of Interstitial Cystitis & Related Syndromes
14. Antimicrobial agents used in treatment of G.U. Tract infections
15. Urologic manifestations of HIV infections, AIDS and related syndromes

Genito-Urinary Trauma

1. Diagnosis & Management in Blunt Renal Trauma
2. Diagnosis & Management in Penetrating Renal Trauma
3. Diagnosis & Management of Renovascular injuries
4. Diagnosis & Management of Iatrogenic and Intraoperative Ureteral injuries
5. Diagnosis & Management of Bladder injuries
6. Diagnosis & Management of Urethral injuries
7. Diagnosis & Management of Penile injuries
8. Diagnosis & Management of Scrotal and Testicular trauma
9. Diagnosis & Management of Retroperitoneal Haematoma

Adrenal Disorders

1. Evaluation and Management of Adrenal Cortical Disorders
2. Evaluation and Management of Adrenal Medullary Disorders
3. Evaluation and Management of Adrenal Carcinoma

Renal Failure & Renal Replacement Therapy

1. Aetiology of Acute and Chronic Renal Failure
2. Management of Acute Renal Failure
3. Management of Chronic Renal Failure
4. Complications of Renal Failure and their Management
5. Principles of Dialysis therapy – Haemodialysis, Peritoneal Dialysis
6. Immunological considerations in Renal Transplantation
7. Live Donor evaluation for Renal Transplantation
8. Cadaver Donor evaluation for Renal Transplantation

Urinary Calculus Disease

1. Etiopathogenesis of Urinary Tract Calculi
    a. Theories of Urolithiasis
    b. Endocrine factors in development of Urolithiasis
    c. Role of Modulators
    d. Types of composition of Urinary Calculi
    e. Role of Stone Analysis and types of stone analysis

2. Dietary and Medical Management of Calculus Disease
3. Principles and practice of Extracorporeal Shock Wave Lithotripsy (ESWL)
    a. Evolution of ESWL
    b. Types of Lithotriptors
    c. Indications of ESWL
    d. Post ESWL management
    e. Complications of ESWL and follow up

Benign Prostatic Hyperplasia

1. Pathophysiology of Benign Prostatic Hyperplasia
2. Clinical evaluation of Benign Prostatic Hyperplasia
3. Medical Management of Benign Prostatic Hyperplasia
4. Minimally Invasive Therapy in Benign Prostatic Hyperplasia

Urologic Oncology

1. Overview of Cancer Biology & Principles of Urologic Oncology
2. Paediatric Urogenital tumours
3. Benign & Malignant tumours of the G.U. Tract in Adults
    a. Renal tumours
    b. Upper tract Transitional Cell Tumours
    c. Bladder tumours
    d. Tumours of the prostate
    e. Tumours of the Seminal Vesicles
    f. Tumours of the Urethra
    g. Tumours of the penis
    h. Tumours of the Penile & Scrotal Skin
    i. Testicular tumours
    j. Extragonadal germ-cell tumours
    k. Retroperitoneal tumours
    l. Metastatic tumours of the G.U. Tract
4. Radiotherapy in Genitourinary tumours
5. Chemotherapy of Genitourinary tumours
6. Gene therapy in Genitourinary tumours
7. Other advanced therapeutic modalities in Genitourinary tumours

Foetal & Perinatal Urology

1. Prenatal & Postnatal Urologic diagnosis and management

2. Neonatal & Perinatal Emergencies – Diagnosis & Management

Paediatric Urology

1. Cryptorchidism and Ectopic Testes
    a. Etiopathogenesis
    b. Diagnosis and Imaging
    c. Hormone therapy
    d. Surgical Management

2. Vesico-ureteric reflux
    a. Primary and Secondary Vesico-ureteric reflux
    b. Evaluation and Principles of Management of Primary Vesico-ureteric reflux
    c. Urinary Tract Infections – Role of chemoprophylaxis
    d. Renal and Bladder complications in Vesico-ureteric reflux

3. Megaureter
    a. Primary obstructive Megaureter – Diagnosis & Management
    b. Principles of Ureteric Reimplantation

4. Ectopic Ureter and Ureterocoele – Diagnosis & Management
5. Exstrophy – Epispadias complex – Principles of Management
6. Cloacal Malformations – Principles of Management
7. Diagnosis & Management of Prune Belly Syndrome
8. Posterior Urethral Valves & other Urethral Anomalies
    a. Diagnosis
    b. Complications
    c. Principles of Management

Andrology

1. Normal Physiology of Male Reproduction
2. Diagnosis Approach in Male Infertility
3. Varicocoeles – Diagnosis & Management
4. Endocrine & Medical Management of Male Infertility
5. Surgical Management of Male Infertility
6. Overview of Assisted Reproduction Techniques
7. Physiology & Pharmacology of Penile Erection and Pathophysiology of Erectile Dysfunction
8. Diagnostic tests in Erectile Dysfunction
9. Medical and other therapies in Erectile Dysfunction
10. Peyronie's Disease
11. Penile Prosthesis implantation – Types, indications and complications
12. Phallic reconstruction following trauma

Neuro-Urology

1. Neurophysiology and Pharmacology of Micturition and Continence
2. Pathophysiology of Neurovesical dysfunction
    a. CNS Disorders
    b. Spinal trauma
    c. Spinal dysraphism
    d. Pelvic surgery
    e. Diabetes
3. Urodynamics & its applications in Incontinence and Voiding dysfunction
    a. Uroflowmetry
    b. Cystometrogram
    c. Urethral Pressure Profile & EMG
    d. Videourodynamics
    e. Ambulatory Urodynamics
4. Medical Management of Urinary Incontinence.
5. Female Urinary Incontinence – Evaluation & Management
    a. Urge Incontinence.
    b. Stress Incontinence.
    c. Mixed Incontinence.
6. Implantation of Artificial Sphincter in men and women
7. Reconstruction of Dysfunctional Urinary Tract

Female Urology

1. Management of Urologic conditions in Pregnancy
2. Management of Urogenital Fistulae in women
3. Gynaecological tumours & the Female Urinary Tract
4. Female Lower Urinary Tract Reconstruction
5. Urinary incontinence in females
6. Treatment of Stress Incontinence
7. Surgery for Incontinence
8. Stress Incontinence and Cystocoele
9. Posterior Vaginal Wall Prolapse
10. Enterocoele
11. Uterine Prolapse
12. Urethral Diverticulum
13. Vesico Vaginal Fistula
14. Injuries (Iatrogenic) during Gynaecologic procedures and management
15. Pathology affecting primarily Genital organs in females – causing secondary effects on urinary organs and management

Renal Transplantation

1. Immunological considerations in Renal Transplantation
2. Live Donor evaluation for Renal Transplantation
3. Recipient evaluation for Renal Transplantation
4. Complications of Renal Transplantation and their management
    a. Medical
    b. Surgical
5. Transplantation in Special Groups
    a. Patients with Neuropathic Bladder / Urinary Diversions
    b. Paediatric patients
    c. Previously transplanted patients
    d. Multiple Organ Recipients
6. Cadaver Donor evaluation for Renal Transplantation
    a. Evaluation of Cadaver Donor
    b. Cadaver Donor Management
    c. Certification of Brain Death
    d. Organ retrieval, storage, and transport
7. Legal and Ethical aspects of Organ Transplantation

Reconstructive Urology

1. Principles of Ureteral Reconstruction
2. Principles of Bladder Reconstruction
3. Principles of Urethral Reconstruction
4. Principles of Bladder Substitution procedures
5. Principles governing use of Intestinal Segments in Urological Reconstruction
6. Autologus tissue transfer options in Urology
7. Principles of Urinary Diversion & Undiversion
8. Complications of Urinary Diversion

Endo Urology

1. Endoscopic anatomy of the Upper and Lower Urinary Tract
2. Physics governing Endourologic equipment
3. Basic technical aspects of Endourologic equipment
    a. Cystoscope
    b. Resectoscope
    c. Ureterorenoscope
    d. Nephroscope
    e. Laparoscope
    f. Associated accessories
4. Anaesthetic consideration in Endourologic surgery
5. Endourologic procedures – Indications, Performance, and Complications

a. Lower Urinary Tract Endoscopy
b. Transurethral Resection of Prostate
c. Transurethral Resection of Bladder Tumours
d. Ureterorenoscopy
e. Percutaneous Nephroscopy
f. Intracorporeal Lithotripsy devices
g. Endoscopic Reconstructive Procedures
h. Endoscopic Laser Applications

6. Implants, Biomaterials and others

a. Urethral Catheters
b. Urethral Stents
c. Ureteric Catheters
d. Ureteric Stents
e. Baskets & Graspers
f. Endoscopic Laser Devices
g. Ureteric Dilators
h. Guide wires
i. Autologus Biomaterials
j. Synthetic Biomaterials
k. Prosthesis & Sphincter Implants
l. Tissue Culture Products

Operative Urology

1. Surgical approaches to the Kidneys
2. Surgical approaches to the Adrenals
3. Surgery of the Kidneys

a. Surgery in Renal Trauma
b. Surgical procedures in Renovascular disease
c. Auto transplantation of the Kidney
d. Surgical procedures for Pelvi-ureteric junction obstruction
e. Surgical procedures on Adrenals
f. Nephrectomy for benign disease
g. Nephrectomy for malignant disease
h. Nephron sparing Surgical procedures

4. Surgical procedures for Renal Calculi

a. Pyelolithotomy & Extended Pyelolithotomy
b. Anatrophic Nephrolithotomy
c. Coagulum Pyelolithotomy
d. Nephrolithotomy
e. Percutaneous Nephrostolithotomy (PCNL)

5. Surgery of the Adrenal Glands

a. Adrenal Tumours
b. Adrenal Cysts

c. Phaeochromocytoma

6. Surgery of the Ureter
    a. Ureterolithotomy
    b. Uretero-ureterostomy
    c. Trans Uretero-ureterostomy
    d. Ureteral replacement
    e. Ureteral Tailoring and Reimplantation
    f. Boari's Flap Reimplantation
    g. Ureterolysis & Ureteral Transposition

7. Surgery of the Urinary Bladder
    a. Suprapubic Cystostomy
    b. Surgery for Vesical Calculi
    c. Bladder diverticulectomy
    d. Augmentation Cystoplasty
    e. Partial Cystectomy
    f. Radical Cystectomy
    g. Transurethral Resection of Bladder tumour
    h. Repair of Vesico-vaginal Fistulae
        i. Vaginal repair
        ii. Abdominal repair
        iii. Repair of complex fistulae
    i. Repair of Rectovesical Fistulae
    j. Bladder neck reconstruction

8. Surgery of the Prostate
    a. Transurethral Resection of the Prostate
    b. Retropubic Prostatectomy
    c. Transvesical Prostatectomy
    d. Radical Retropubic Prostatectomy
    e. Radical Perineal Prostatectomy
    f. Nerve sparing prostatectomy

9. Surgery of the Urethra
    a. Reconstruction of Posterior Urethral Strictures
    b. Reconstruction of Bulbar Urethral Strictures
    c. Reconstruction of Anterior Urethral Strictures
    d. Endoscopic Urethrotomy
    e. Perineal Urethrostomy
    f. Meatoplasty & Glanuloplasty
    g. Single-stage repair of Hypospadias
    h. Staged repair of Hypospadias
    i. Surgery of Urethral Carcinoma

10. Surgery in Male Infertility
    a. Varicocoele ligation
    b. Ejaculatory duct incision

c. Vaso-vasostomy
d. Vaso-epididymostomy
e. Vaso-epididymal Fistulae

11. Surgery of the Scrotum
    a. Surgery for Hydrocoele & Chylocoele
    b. Surgery for Haematocoele
    c. Reconstructive procedures in trauma

12. Surgery for Testes
    a. Orchidopexy in Cryptorchidism
    b. Orchidopexy in Torsion
    c. Orchidectomy for benign conditions
    d. Orchidectomy for malignant conditions
    e. Testicular biopsy
    f. Testicular reimplantation

13. Surgery of the Penis
    a. Surgery for Penile Curvature
    b. Biopsy of Penile lesion
    c. Circumcision
    d. Partial Penectomy
    e. Total Penectomy
    f. Organ conserving procedures in Penile Carcinoma
    g. Post traumatic Penile reconstruction
    h. Penile Prosthesis Implantation

14. Urinary Diversions
    a. Vesicostomy
    b. Cutaneous Ureterostomy
    c. Illeal conduit
    d. Continent diversion using ileum
    e. Continent diversions using illeo-caecal valve
    f. Orthotopic Neobaldder
    g. Mitrofanoff and Benchecroun Procedures
    h. Ureterosigmoidostomy

15. Surgery for Associated Conditions
    a. Retroperitoneal Lymphadenectomy
    b. Nerve sparing Retroperitoneal Lymphadenectomy
    c. Ilio-inguinal Lymphadenectomy

16. Renal Transplantation
    a. Techniques of Renal Transplantation
    b. Cadaver & Live Donor harvesting technique
    c. Complications of Donor Nephrectomy & Transplantation
       (i) Medical (ii) Surgical

d. Vascular access in Renal failure

17. Surgery for Incontinence
    a. Endoscopic Bladder Neck Suspension
    b. Transabdominal Bladder Neck Suspension
    c. Abdominal & Vaginal Sling Procedures
    d. Endoscopic Injection Procedures
    e. Artificial Sphincter implantation

18. Basic Principles of Laparoscopic procedures in Urology

Recent Advances in Urology (including other emerging topics related to Urology)

The broad objectives set out above are to be achieved through assumption of graded responsibility in patient care and operative work. A broad outline of such graded responsibility is given below:

I Year

Months 0 – 3	**Orientation to the Institution & Department** Introduction to OPD, Ward and Patient Care routine Introduction to Case Record Maintenance Introduction to Diagnostic procedures Introduction to Preoperative and Postoperative Care Introduction to Consultations, inter-departmental activities
Months 3 – 6	Allocation of patient beds Comprehensive record maintenance Planning and execution of Diagnostic cascade Planning and execution of Pre and Postoperative Care Attending Emergency Consultations Attending cases in the Emergency and Casualty services Assisting at Emergency and Elective Operative procedures Introduction to basic Diagnostic Urologic Endoscopy Long-term monitoring of patients

Months 6 – 12	Further refinement of above Performing Diagnostic Urologic procedures Attending operation theatres Independently attending Emergency and Casualty calls Performing Emergency operations under supervision Performing Elective operations under supervision Introduction to Therapeutic Lower Tract Endoscopy

II Year

Months 12 – 18	Assisting juniors in their patient care responsibilities Performing advanced diagnostic procedures Performing assigned operations Assisting seniors at Complicated Urologic procedures Performing diagnostic Lower Tract Endoscopy Performing assigned Therapeutic Endoscopy Documentation of Clinical Case Material and archiving Supervising clinical and operative work of juniors
Months 18 – 24	Assisting juniors in operative procedures Performing Therapeutic Lower Tract Endoscopy Performing assigned reconstructive operations Performing complicated diagnostic procedures Performing advanced operations under supervision Supervising clinical and operative work of juniors

III Year

Months 24 – 36	Providing peer support to juniors in all above activities Rotations through allied specialties like Nephrology and to other Units / Institutions for exposure to advanced aspects of Urology Undertaking camps, surveys, clinical studies etc., as part of Departmental activity from time to time.

In addition to patient-care, the candidates will have responsibilities in the following areas:

1. Clinical Responsibilities

I Year	Diagnosis of all Urology disorders and allied patient care
II Year	Management of complex Urologic disorders, as well as complications of surgery and interdisciplinary problems
III Year	Practice of protocol-based management and development of such management protocols

2. Teaching Responsibilities

I Year	Presenting Journal Clubs Undergraduate Medical Teaching * Postgraduate teaching of surgical trainees and trainees in other specialties* Teaching Paramedical staff
II Year	Presenting Seminars Critical appraisal of presentations and papers Presenting papers at State, Regional, and National Conferences
III Year	Developing and leading specific projects related Urology Guiding juniors and peers in academic activities and presentations

* Continues in II & III year

3. Schedule of Departmental Activities

Postgraduate departments of Urology offering M.Ch. training have evolved a variety of departmental training activities. The following schedule shall serve as a guideline with further refinements being made whenever necessary

Activity	**Frequency**
1. Clinical rounds	Thrice weekly
2. Journal Clubs	Once weekly
3. Seminars	Once weekly
4. Audit / Statistical meeting	Once weekly

5. Inter-departmental meetings

• Nephrology	Fortnightly
• Radiology	Fortnightly
• Pathology	Monthly
• Radiation Oncology	Monthly
• Inter-institutional	Monthly / Bi-monthly

Please see Chapter IV: Monitoring & Learning Process for check-list and other details

4. Orientation

a. Library

The postgraduate student will become familiar with the books, periodicals, and other publications pertaining to Urology that are available in the Institution. A list of such books etc. will be on record in the department. In addition to this, departments will develop and maintain *Departmental Libraries*, which will contain highly specialised books and publications from which the postgraduate can benefit.

b. Laboratory Procedures

The candidate will familiarise himself/herself with the different diagnostic procedures in Urology through a process of interaction with the departments like Clinical Biochemistry, Pathology, Radiology etc., wherever feasible. The candidate may be rotated through these departments in order to familiarise him/her with the nuances of these procedures.

The following diagnostic procedures are specialised and specific to Urologic practice:

1. Urodynamic procedures
2. Nocturnal penile tumescence (NPT)

Certain other diagnostic evaluations like CT Scan, MRI, Colour Doppler scans are in increasing use in Urology. Familiarity with these is vital for the practice of Urology today. Therefore, if facilities for these are not available within the Institution, postgraduates may be

posted to other Institutions where they are available. A similar practice may be employed for any other upcoming diagnostic modalities.

c. Research

The component of research shall be promoted by encouraging candidates to undertake projects during the first two years' of their course. In this period, they will be introduced formally to the following aspects of Research:

1. Ethics of Clinical Research
2. Fundamentals of clinical studies
3. Types of clinical studies
4. Data recording
5. Data processing and results
6. Statistical analysis
7. Critical evaluation of published data and reports
8. Publication and peer review

This objective may be achieved either through an intramural programme or by enrolling postgraduates in an extramural programme providing the necessary training.

d. National Programmes

Postgraduates will be familiarised with National Programmes applicable to Urology as well as those of social importance. The department shall encourage inter-departmental activities that will increase the awareness of these programmes. All programmes directly applicable to Urology and meant for implementation shall be duly implemented.

e. Regulations

The postgraduates will be sensitised to regulations under different Legislative Acts, such as the *Medical Council of India Act, The Code of Medical Ethics, Transplantation of Human Organs Act,* etc. They will also be familiarised with other legislations that affect the practice

of Clinical Medicine (like *The Consumer Protection Act, The Drugs and Cosmetics Act, The Medical Termination of Pregnancy Act, the Narcotics and Psychotropic Substances Control Act, etc.)*. This will be done through a process of informal contact and engagement with experts in the field.

f. Monitoring of Teaching / Learning Activities

Activity	***Periodicity of Assessment***	***Method***
1. Journal Clubs	Monthly	Faculty and Peer review as per check list
2. Seminars	Monthly	
3. Theory knowledge	Six monthly	Written test
4. Clinical performance	Six monthly	Clinical exam
5. Operative work	Six monthly	Log book
6. Research & Presentation	Six monthly	Logbook & Faculty peer review using check-list

The performance of candidates under these heads will be conveyed to them every six months and a record will be maintained in the department. The Department Head or Director will fulfil all University requirements pertaining to such assessment and keep the University posted 6 monthly.

Scheme of Examination

The examination shall consist of the following parts:

1. Theory
2. Clinical Examinations & Viva Voce

1. **Theory**

The theory examination shall consist of four papers of 100 marks each. Each paper in turn shall consist of two long questions of 20 marks each and six short questions of 10 marks each. All questions shall be compulsory. Each theory paper shall run for 180 minutes (3 hours).

Detailed list of topics in each paper enclosed – Appendix I

Paper I **Basic Sciences as applied to Urology**

This shall include Anatomy, Physiology, Biochemistry, Pharmacology, Microbiology, Immunology, Pathology and Genetics. The paper shall only contain questions and problems based on these areas, but directly connected to the practice of Urology.

Paper II **Principles and Practice of Urology**

This shall include the general principles involved in diagnosing and treating patients with Urologic symptoms and signs. This may also include those diagnostic modalities and tests that are used to arrive at Urologic diagnosis and to monitor the response to treatment.

Paper III **Specialty Urology**

This shall include topics in the special areas of urology such as ***Foetal & Perinatal Urology, Paediatric Urology, Andrology, Neuro-urology, Female Urology, Dialysis & Renal Transplantation, Reconstructive urology and Endourology.***

Paper IV **Operative Urology + Recent advances in Urology**

Operative Urology shall cover all aspects of theory as applicable to Urologic surgical procedures. Specifically, this shall cover points like surgical anatomy, surgical approach, indications and contraindications, choice of procedure, complications and measures to avoid them, salvage procedures etc., in the case of open surgery. In the case of endoscopic surgery, it may also include endoscopic anatomy, endoscopic hardware, and the limitations of endoscopic approach wherever applicable. This paper may also cover certain directly relevant technologic issues like Structure of Endoscopes, Energy sources in endoscopic surgery etc.

Recent Advances shall cover recent biologic, diagnostic, or technological advances that impact on the current and future practice of Urology. This will also include biomaterials and implants used in Urology (for e.g. Stents, prosthesis, suture materials, clips etc.) and technological advances like Computers, Robotics, etc. The guiding principle for this will be the current relevance to of these to Urologic practice.

2. ***Clinical Examination***

The clinical examination will aim at examining the clinical skills and competence of candidates in the field of Urology.

Part I Endoscopic Urology

This segment shall carry 35 marks. The candidate shall be evaluated for the following skills and knowledge of Diagnostic Cystourethroscopy:

a) Ability to identify and correctly assemble parts of an endoscope
b) Knowledge of its parts, their functioning and application
c) Identification and correct use of important accessories of endoscope
d) Limitations of different types of endoscopes
e) Ability to introduce endoscope correctly and use it for correct diagnosis of pathology
f) Steps necessary for sterilisation and protection of endoscopes
g) Failure to satisfactorily conduct the operation will not be grounds for failing the candidate.

Part II Clinical Cases

This segment shall carry a total of 225 marks (70 marks for the Long case and 20 marks for each of the 3 Short cases). The purpose of this segment of examination will be to assess the candidate's skill and competence in diagnosing the patient's disease and formulating a sound plan for management. In addition, the candidate's ability to elicit history, carry out the relevant physical examination, and present all these in a cohesive and logical order will also be assessed.

For this purpose, 1 long case and 3 short cases will be chosen. These will be representative of the variety of pathologies with which Urologic patients commonly present to the hospital. All examiners through a process of consultation shall select the cases. If more than one candidate is appearing for the exam, all efforts shall be made to avoid more than one candidate getting the same set of cases.

The examiners shall do the marking for this segment independently, in order to give the candidate the fairest chance of success.

Part III Ward Rounds

The marks for this segment shall be 35. This segment of the examination is intended to assess the candidate's ability to pick up every day problems in the management of Urologic patients. To be assessed will be the candidate's ability to correlate the clinical symptoms of the patient with the different investigations, operative findings, postoperative course etc., and the ability to suggest management measures. The stress here will be on the candidate's ability to logically device the best option as well as to formulate alternatives.

Part IV Viva Voce

This segment shall carry a total of 100 marks. This segment is meant to assess the candidate's overall understanding of Urology. In a sense, this segment will evaluate the candidate and assess whether the candidate fulfils the requirements of training, skill and competence as set out in the objective of the course. This segment may also feature surgical pathology specimens, histopathology slides, radiographs, reports of diagnostic tests etc.

Criteria for declaring as pass in University Examination

A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory, (2) Practical including clinical and viva voce examination.

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

LIST OF OPERATIVE PROCEDURES TO BE PERFORMED BY M.Ch. (UROLOGY) TRAINEES UNDER RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES, KARNATAKA

NOTE

The following list is a compilation of operative procedures that will be performed by Trainees as part of the M.Ch. (Urology) Programme in the University. The time frame under which these procedures will be performed has been evolved based on the degree of competence and knowledge required. As the trainee progresses through the course, he/she will assist juniors in performing procedures under the earlier category. Similarly, he/she will assist seniors in performing procedures under the higher category as a build up to performance of the higher category procedure.

This list consists of the most common procedures as currently practised. Additional procedures will be added to each category as and when they evolve. The classification will again be based on the degree of training and expertise required to perform those new procedures.

This schedule is meant to serve as a guideline for trainees, as well as for trainers. It is incumbent on both to make all efforts to fulfil the requirement. The exact number of such procedures performed is likely to vary. It is suggested that at least a majority of the procedures in each Category up to Category IV be performed mandatorily. The Training Institutions may keep this in mind when they draw up the training schedule for their candidates.

Category I **0 – 6 months**

1. Biopsy
2. Bladder Distension
3. Circumcision
4. Clot Evacuation
5. Dorsal Slit
6. Stent Removal
7. Testicular Biopsy
8. Urethral Dilatation
9. Cystoscopy (Diagnostic)
10. Filiform Dilatation
11. Retrograde Catheterisation
12. Retrograde Pyelography
13. Endoscopic Biopsy
14. Hydrocoele & Spermatocoele Repair

Category II **6 – 12 months**

1. Cystolithotomy
2. Meatoplasty
3. Orchidectomy
4. Shunt for Priaprism
5. Suprapubic Cystostomy
6. Ureteric Stenting
7. Visual Internal Urethrotomy
8. Vesicostomy
9. High Orchidectomy
10. Rovesing's Operation
11. Varicocoele ligation
12. Amputation of Penis – Partial
13. Orchidopexy
14. Bladder Repair after Trauma

Category III **12 – 18 months**

1. Bladder Diverticulectomy
2. Bladder Neck Resection / Incision
3. Endoscopic Removal of F.B.
4. Epididymectomy
5. Nephrostomy
6. Uretero Sigmoidostomy – 1st
7. Ureterolithotomy
8. Perinephric Abscess Drainage
9. Penile Exploration
10. Ureteric Meatotomy
11. Cutaneous Ureterostomy
12. Amputation of Penis - Total
13. Epididymo Vasostomy
14. Hypospadias - Staged repair
15. Diagnostic Ureterorenoscopy
16. Prostatectomy Frayers / Millin's
17. Dialysis access surgery
18. Fulguration of PUV

Category IV **18 – 24 months**

1. Exploration of Renal Trauma
2. Hypospadias – Single Stage
3. Nephrectomy
4. Partial Cystectomy
5. Ureteric re-implantation
6. Urethroplasty (Staged)
7. Boar's flap Ureteric implantation
8. Illeocystoplasty
9. Pyelolithotomy
10. Nephrolithotomy
11. Pyeloplasty
12. Anatrophic Nephrolithotomy
13. Coagulum Pyelolithotomy
14. Percutaneous Nephrolithotomy
15. Transurethral Resection of Prostate (Small)
16. Transurethral Resection of Bladder Tumour
17. Ilio-inguinal block dissection

Category V **24 – 30 months**

1. Bladder neck suspension
2. Transurethral Resection of Prostate
3. Urethroplasty – Single stage
4. Uretero ureterostomy
5. Vesical / Ureteral Fistula repair
6. Donor Nephrectomy
7. Renal Transplantation
8. Illeal loop conduit
9. Nephro ureterectomy
10. Partial nephrectomy
11. Radical Nephroureterectomy
12. Penile Prosthesis
13. Adrenalectomy
14. Therapeutic Ureteroscopy

Category VI **30 – 36 months**

1. Auto transplantation of kidney
2. Complex VVF Repair
3. Total Cystectomy
4. Continent Diversion
5. Ureteric replacement
6. Radical Prostatectomy
7. Diagnostic Laparoscopy
8. Retroperitoneal Lymphadenectomy
9. Renovascular surgery

RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES, KARNATAKA

M.Ch. Urology

Scheme of Examination

Topics for Respective Papers

PAPER 1

BASIC SCIENCES AS APPLIED TO UROLOGY

1. Surgical Anatomy of Genito-urinary Tract
2. Normal Renal Physiology
3. Renal Biochemistry – Acid base and fluid regulation
4. Renal Endocrinology
5. Physiology & Pharmacology of Renal Pelvis & Ureter
6. Physiology of Urinary Bladder
7. Genetic determinants of Urologic Diseases
8. Radionuclide studies in Urology
9. Pathophysiology of Urinary Tract Obstruction
    a. Upper Urinary Tract
    b. Lower Urinary Tract
10. Embryology & Normal Development of the Genito-urinary tract
11. Embryology of Congenital Anomalies of the G.U. Tract
    a. Vesico-Ureteric Reflux, Mega Ureter & Ureteral Re-implantation
    b. Ectopic Ureter & Ureterocoele
    c. Exstrophy of the Bladder, Epispadias & other Bladder Anomalies
    d. Cloacal Malformations
    e. Prune Belly Syndrome
    f. Posterior Urethral Valves & other Urethral Anomalies
    g. Hypospadias
    h. Congenital Anomalies of Testes
12. Renal Function in Foetus & Neonates
13. Renal Dysplasia & Cystic disease of Kidney
14. Disorders of Sexual Differentiation
15. Normal and abnormal spermatogenesis
16. Urologic Examination & Diagnostic Techniques – Imaging of the G.U. Tract
    a. Urologic Ultrasonography
    b. Excretory & Retrograde Pyelography
    c. Lower Urinary Tract Radiography
    d. CT and other Imaging modalities
17. Urinary tract changes in Pregnancy and Puerperium
18. Pathologic Techniques in Urology
    a. Urinary Cytology
    b. Flow Cytometry
    c. Fine Needle Aspiration Cytology

d. Needle Biopsy
e. Immunohistochemistry and other relevant Special Techniques

19. Overview of Genital and Urinary Tract Pathogens

PAPER 2

PRINCIPLES AND PRACTICE OF UROLOGY

Infections & Inflammations of G.U. Tract

1. Host Defence Mechanisms against Urinary Tract Infections
2. Bacterial infections of the Urinary tract – Diagnosis & Management
3. Urinary Tract Infections in Pregnancy – Screening, Evaluation & Management
4. Management of Acute & Chronic Pyelonephritis, Emphysematous Pyelonephritis
5. Approach to Management of Urinary Tract Infection in Infants & Children
6. Diagnosis & Management of Prostatitis & Related disorders
7. Diagnosis & Management of Sexually transmitted diseases
8. Diagnosis & Management of Cutaneous diseases of External Genitalia
9. Diagnosis & Management of Parasitic diseases of G.U. Tract
10. Diagnosis & Management of Fungal infections of Urinary Tract
11. Diagnosis & Management of Genito-Urinary Tuberculosis
12. Management of Fournier's Gangrene and Other Soft Tissue Infections
13. Diagnosis and Management of Interstitial Cystitis & Related Syndromes
14. Antimicrobial agents used in treatment of G.U. Tract infections
15. Urologic manifestations of HIV infections, AIDS and related syndromes

Genito-Urinary Trauma

1. Diagnosis & Management in Blunt Renal Trauma
2. Diagnosis & Management in Penetrating Renal Trauma
3. Diagnosis & Management of Renovascular injuries
4. Diagnosis & Management of Iatrogenic and Intraoperative Ureteral injuries
5. Diagnosis & Management of Bladder injuries
6. Diagnosis & Management of Urethral injuries
7. Diagnosis & Management of Penile injuries
8. Diagnosis & Management of Scrotal and Testicular trauma
9. Diagnosis & Management of Retroperitoneal Haematoma

Adrenal Disorders

1. Evaluation and Management of Adrenal Cortical Disorders
2. Evaluation and Management of Adrenal Medullary Disorders
3. Evaluation and Management of Adrenal Carcinoma

Renal Failure & Renal Replacement Therapy

1. Aetiology of Acute and Chronic Renal Failure
2. Management of Acute Renal Failure
3. Management of Chronic Renal Failure
4. Complications of Renal Failure and their Management
5. Principles of Dialysis therapy – Haemodialysis, Peritoneal Dialysis
6. Immunological considerations in Renal Transplantation
7. Live Donor evaluation for Renal Transplantation
8. Cadaver Donor evaluation for Renal Transplantation

Urinary Calculus Disease

1. Etiopathogenesis of Urinary Tract Calculi
    a. Theories of Urolithiasis
    b. Endocrine factors in development of Urolithiasis
    c. Role of Modulators
    d. Types of composition of Urinary Calculi
    e. Role of Stone Analysis and types of stone analysis

2. Dietary and Medical Management of Calculus Disease
3. Principles and practice of Extracorporeal Shock Wave Lithotripsy (ESWL)
    a. Evolution of ESWL
    b. Types of Lithotriptors
    c. Indications of ESWL
    d. Post ESWL management
    e. Complications of ESWL and follow up

Benign Prostatic Hyperplasia

1. Pathophysiology of Benign Prostatic Hyperplasia
2. Clinical evaluation of Benign Prostatic Hyperplasia
3. Medical Management of Benign Prostatic Hyperplasia
4. Minimally Invasive Therapy in Benign Prostatic Hyperplasia

Urologic Oncology

1. Overview of Cancer Biology & Principles of Urologic Oncology
2. Paediatric Urogenital tumours
3. Malignant tumours of the G.U. Tract in Adults
    a. Renal tumours
    b. Upper tract Transitional Cell Tumours
    c. Bladder tumours
    d. Tumours of the prostate
    e. Tumours of the Seminal Vesicles
    f. Tumours of the Urethra
    g. Tumours of the penis
    h. Tumours of the Penile & Scrotal Skin
    i. Testicular tumours
    j. Extragonadal germ-cell tumours
    k. Retroperitoneal tumours
    l. Metastatic tumours of the G.U. Tract

4. Radiotherapy in Genitourinary tumours
5. Chemotherapy of Genitourinary tumours
6. Gene therapy in Genitourinary tumours
7. Other advanced therapeutic modalities in Genitourinary tumours

PAPER 3

SPECAILTY UROLOGY

Foetal & Perinatal Urology

1. Prenatal & Postnatal diagnosis and management
2. Neonatal & Perinatal Emergencies – Diagnosis & Management

Paediatric Urology

1. Cryptorchidism and Ectopic Testes
   a. Etiopathogenesis
   b. Diagnosis and Imaging
   c. Hormone therapy
   d. Surgical Management

2. Vesico-ureteric reflux
   a. Primary and Secondary Vesico-ureteric reflux
   b. Evaluation and Principles of Management of Primary Vesico-ureteric reflux
   c. Urinary Tract Infections – Role of chemoprophylaxis
   d. Renal and Bladder complications in Vesico-ureteric reflux

3. Megaureter
   a. Primary obstructive Megaureter – Diagnosis & Management
   b. Principles of Ureteric Reimplantation

4. Ectopic Ureter and Ureterocoele – Diagnosis & Management
5. Exstrophy – Epispadias complex – Principles of Management
6. Cloacal Malformations – Principles of Management
7. Diagnosis & Management of Prune Belly Syndrome
8. Posterior Urethral Valves & other Urethral Anomalies
   a. Diagnosis
   b. Complications
   c. Principles of Management

Andrology

1. Normal Physiology of Male Reproduction
2. Diagnosis Approach in Male Infertility
3. Varicocoeles – Diagnosis & Management
4. Endocrine & Medical Management of Male Infertility
5. Surgical Management of Male Infertility
6. Overview of Assisted Reproduction Techniques
7. Physiology & Pharmacology of Penile Erection and Pathophysiology of Erectile Dysfunction
8. Diagnostic tests in Erectile Dysfunction
9. Medical and other therapies in Erectile Dysfunction
10. Peyronie's Disease
11. Penile Prosthesis implantation – Types, indications and complications
12. Phallic reconstruction following trauma

Neuro-Urology

1. Neurophysiology and Pharmacology of Micturition and Continence
2. Pathophysiology of Neurovesical dysfunction
    a. CNS Disorders
    b. Spinal trauma
    c. Spinal dysraphism
    d. Pelvic surgery
    e. Diabetes

3. Urodynamics & its applications in Incontinence and Voiding dysfunction
    a. Uroflowmetry
    b. Cystometrogram
    c. Urethral Pressure Profile & EMG
    d. Videourodynamics
    e. Ambulatory Urodynamics

4. Medical Management of Urinary Incontinence.
5. Female Urinary Incontinence – Evaluation & Management
    a. Urge Incontinence.
    b. Stress Incontinence.
    c. Mixed Incontinence.

6. Implantation of Artificial Sphincter in men and women
7. Reconstruction of Dysfunctional Urinary Tract

Female Urology

1. Management of Urologic conditions in Pregnancy
2. Management of Urogenital Fistulae in women
3. Gynaecological tumours & the Female Urinary Tract
4. Female Lower Urinary Tract Reconstruction
5. Urinary incontinence in females
6. Treatment of Stress Incontinence
7. Surgery for Incontinence
8. Stress Incontinence and Cystocoele
9. Posterior Vaginal Wall Prolapse
10. Enterocoele
11. Uterine Prolapse
12. Urethral Diverticulum
13. Vesico Vaginal Fistula
14. Injuries (Iatrogenic) during Gynaecologic procedures and management
15. Pathology affecting primarily Genital organs in females – causing secondary effects on urinary organs and management

Renal Transplantation

1. Immunological considerations in Renal Transplantation
2. Live Donor evaluation for Renal Transplantation
3. Recipient evaluation for Renal Transplantation

4. Complications of Renal Transplantation and their management
    a. Medical
    b. Surgical

5. Transplantation in Special Groups
    a. Patients with Neuropathic Bladder / Urinary Diversions
    b. Paediatric patients
    c. Previously transplanted patients
    d. Multiple Organ Recipients

6. Cadaver Donor evaluation for Renal Transplantation
    a. Evaluation of Cadaver Donor
    b. Cadaver Donor Management
    c. Certification of Brain Death
    d. Organ retrieval, storage, and transport

7. Legal and Ethical aspects of Organ Transplantation

Reconstructive Urology

1. Principles of Ureteral Reconstruction
2. Principles of Bladder Reconstruction
3. Principles of Urethral Reconstruction
4. Principles of Bladder Substitution procedures
5. Principles governing use of Intestinal Segments in Urological Reconstruction
6. Autologus tissue transfer options in Urology
7. Principles of Urinary Diversion & Undiversion
8. Complications of Urinary Diversion

Endo Urology

1. Endoscopic anatomy of the Upper and Lower Urinary Tract
2. Physics governing Endourologic equipment\
3. Basic technical aspects of Endourologic equipment
    a. Cystoscope
    b. Resectoscope
    c. Ureterorenoscope
    d. Nephroscope
    e. Laparoscope
    f. Associated accessories
4. Anaesthetic consideration in Endourologic surgery
5. Endourologic procedures – Indications, Performance, and Complications\
    a. Lower Urinary Tract Endoscopy
    b. Transurethral Resection of Prostate
    c. Transurethral Resection of Bladder Tumours
    d. Ureterorenoscopy
    e. Percutaneous Nephroscopy
    f. Intracorporeal Lithotripsy devices
    g. Endoscopic Reconstructive Procedures
    h. Endoscopic Laser Applications
6. Implants, Biomaterials and others
    a. Urethral Catheters
    b. Urethral Stents
    c. Ureteric Catheters
    d. Ureteric Stents
    e. Baskets & Graspers
    f. Endoscopic Laser Devices
    g. Ureteric Dilators
    h. Guide wires
    i. Autologus Biomaterials
    j. Synthetic Biomaterials
    k. Prosthesis & Sphincter Implants
    l. Tissue Culture Products

PAPER 4

OPERATIVE UROLOGY & RECENT ADVANCES

Operative Surgery

1. Surgical approaches to the Kidneys
2. Surgical approaches to the Adrenals
3. Surgeries of the Kidneys
    a. Surgery in Renal Trauma
    b. Surgical procedures in Renovascular disease
    c. Auto transplantation of the Kidney
    d. Surgical procedures for Pelvi-ureteric junction obstruction
    e. Surgical procedures on Adrenals
    f. Nephrectomy for benign disease
    g. Nephrectomy for malignant disease
    h. Nephron sparing Surgical procedures
4. Surgical procedures for Renal Calculi
    a. Pyelolithotomy & Extended Pyelolithotomy
    b. Anatrophic Nephrolithotomy
    c. Coagulum Pyelolithotomy
    d. Nephrolithotomy
    e. Percutaneous Nephrostolithotomy (PCNL)
5. Surgery of the Adrenal Glands
    a. Adrenal Tumours
    b. Adrenal Cysts
    c. Phaeochromocytoma
6. Surgery of the Ureter
    a. Ureterolithotomy
    b. Uretero-ureterostomy
    c. Trans Uretero-ureterostomy
    d. Ureteral replacement
    e. Ureteral Tailoring and Reimplantation
    f. Boari's Flap Reimplantation
    g. Ureterolysis & Ureteral Transposition
7. Surgery of the Urinary Bladder
    a. Suprapubic Cystostomy
    b. Surgery for Vesical Calculi
    c. Bladder diverticulectomy
    d. Augmentation Cystoplasty
    e. Partial Cystectomy
    f. Radical Cystectomy
    g. Transurethral Resection of Bladder tumour
    h. Repair of Vesico-vaginal Fistulae
        i. Vaginal repair

ii. Abdominal repair
iii. Repair of complex fistulae

i. Repair of Rectovesical Fistulae
j. Bladder neck reconstruction

8. Surgery of the Prostate
   a. Transurethral Resection of the Prostate
   b. Retropubic Prostatectomy
   c. Transvesical Prostatectomy
   d. Radical Retropubic Prostatectomy
   e. Radical Perineal Prostatectomy
   f. Nerve sparing prostatectomy

9. Surgery of the Urethra
   a. Reconstruction of Posterior Urethral Strictures
   b. Reconstruction of Bulbar Urethral Strictures
   c. Reconstruction of Anterior Urethral Strictures
   d. Endoscopic Urethrotomy
   e. Perineal Urethrostomy
   f. Meatoplasty & Glanuloplasty
   g. Single-stage repair of Hypospadias
   h. Staged repair of Hypospadias
   i. Surgery of Urethral Carcinoma

10. Surgery in Male Infertility
    a. Varicocoele ligation
    b. Ejaculatory duct incision
    c. Vaso-vasostomy
    d. Vaso-epididymostomy
    e. Vaso-epididymal Fistulae

11. Surgery of the Scrotum
    a. Surgery for Hydrocoele & Chylocoele
    b. Surgery for Haematocoele
    c. Reconstructive procedures in trauma

12. Surgery for Testes
    a. Orchidopexy in Cryptorchidism
    b. Orchidopexy in Torsion
    c. Orchidectomy for benign conditions
    d. Orchidectomy for malignant conditions
    e. Testicular biopsy
    f. Testicular reimplantation

13. Surgery of the Penis
    a. Surgery for Penile Curvature
    b. Biopsy of Penile lesion
    c. Circumcision
    d. Partial Penectomy
    e. Total Penectomy
    f. Organ conserving procedures in Penile Carcinoma
    g. Post traumatic Penile reconstruction

h. Penile Prosthesis Implantation

14. Urinary Diversions
    a. Vesicostomy
    b. Cutaneous Ureterostomy
    c. Illeal conduit
    d. Continent diversion using ileum
    e. Continent diversions using illeo-caecal valve
    f. Orthotopic Neobaldder
    g. Mitrofanoff and Benchecroun Procedures
    h. Ureterosigmoidostomy

15. Surgery for Associated Conditions
    a. Retroperitoneal Lymphadenectomy
    b. Nerve sparing Retroperitoneal Lymphadenectomy
    c. Ilio-inguinal Lymphadenectomy

16. Surgery for Incontinence
    a. Endoscopic Bladder Neck Suspension
    b. Transabdominal Bladder Neck Suspension
    c. Abdominal & Vaginal Sling Procedures
    d. Endoscopic Injection Procedures
    e. Artificial Sphincter implantation

17. Basic Principles of Laparoscopic procedures in Urology

Recent Advances in Urology

Since these advances take place continually, it is superfluous to lay down precise areas to be covered. However, this section may feature questions based on recent developments in all aspects of Urology. The questions will be framed taking into consideration the practical and day-to-day application of the advance and its relevance to Urologists.

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41.	TANAGHO (EMIL A) & MCANINCH (JACK W) SMITHS GENERAL UROLOGY LONDON., PRENTICE-HALL INC., ED.12, 1988.
42.	TANAGHO (EMIL A) & MCANINCH (JACK W) SMITHS GENERAL UROLOGY LONDON., PRENTICE-HALL INC., ED.12, 1988.
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52.	POLLACK (HOWARD M) ED CLINICAL UROGRAPHY : A MANUAL AND ATLAS AND TEXT BOOK OF UROLOGICAL IMAGING (SET OF 3 VOLS.) PHILADELPHIA, WB SAUNDERS, 1990, VOL. .1.
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63.	SILVERBERG (EDWIN) UROLOGIC CANCER: STATISTICAL AND EPIDEMIOLOGICAL INFORMATION NEW YORK, AMERICAN CANCER SOCIETY, 1973.
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65.	DEVOOGT (H J) ET AL URINARY CYTOLOGY: PHASE CONTRAST MICROSCOPY AND ANALYSIS OF STAINED SMEARS BERLIN, SPRINGER-VERLAG, 1977.
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79.	GEORGE (N J R) 7 SAMBROOK (P) ED DIAGNOSTIC PICTURE TESTS IN UROLOGY ENGLAND, WOLFE, 1991.
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86.	CARDOZO (L), ED. UROGYNECOLOGY; THE KING'S APPROACH, 1997

87.	GONZALES (E.T.) & BAUER (S.B.) PEDIATRIC UROLOGY PRACTICE, 1999
88.	CANCER OF UROGENITAL TRACT, PART 1 (9787) AMERICAN CANCER SOCIETY
89.	WILLIAMS (D INNES) ED PEDIATRIC UROLOGY, 1968
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92.	KING (LOWELL R.) UROLOGIC SURGERY IN NEONATES & YOUNG INFANTS, 1988
93.	WHITAKER (ROBERT H) CURRENT PERSPECTIVES IN PEDIATRIC UROLOGY, 1989
94.	SLOVIS, STY, HALLER IMAGING OF PEDIATRIC URINARY TRACT, 1989

JOURNALS

Essential

Current Journals under subscription

1. British Journal of Urology (M)
2. Journal of Urology (M)
3. Urologic Clinics of North America (Q)
4. Transplantation Proceedings (BM)
5. World Journal of Urology (Q)
6. Indian Journal of Urology
7. Urologic Survey
8. Urology

Optional

1. Genitourinary Medicine - 61-67, 1985-91
2. Investigative Urology
3. Scandinavian Journal of Urology and Nephrology - 11-19, 1977-85
4. Journal of Endo-Urology
5. Neuro-Urology and Urodynamics
6. Atlas of Urological Clinics of North America
7. Fertility and Reproduction

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 also 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: (i) Personal Attitudes, (ii) Acquisition of Knowledge, (iii) Clinical and operative skills, and (iv) Teaching skills.

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

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

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

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

Journal Review Meeting (Journal Club): The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist (see Model Checklist – I, Chapter IV)

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

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

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

iii) Clinical skills

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

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

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

iv) Teaching skills : Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See Model checklist V, Chapter IV)

vi) ***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, practicals / clinicals and viva voce.

vii) 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.

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

Log book: The logbook is a record of the important activities of the candidates during his training, Internal assessment should be based on the evaluation of the logbook. Collectively, logbooks 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 logbook for the different activities is given in Tables I to V 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 fulfil the requirements in spite of being given adequate chances to set himself or herself right.

Format of Model Check Lists

Check List - I. MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Student: Name of the Faculty/Observer: Date:

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

Check List - II. MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the Student: Name of the Faculty/Observer: Date:

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

Check List - III

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

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

Name of the Student: Name of the Unit Head: 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.	Counselling patient's relatives for blood donation or PM					
10.	Over all quality of Ward work					
	Total Score					

Check List – IV EVALUATION FORM FOR CLINICAL PRESENTATION

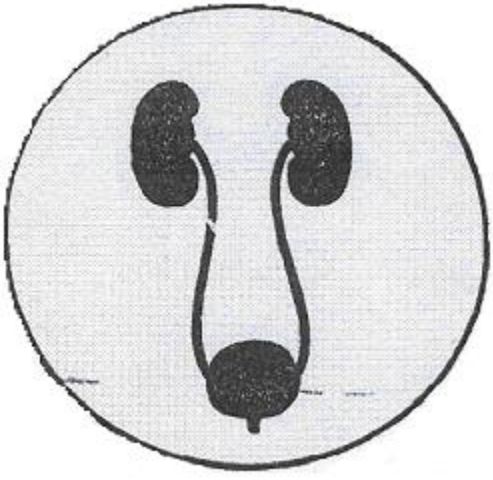
Name of the Student: Name of the Faculty: Date:

Sl. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Above Average 3	Very Good 4
1.	Completeness of history					
2.	Whether all relevant points elicited					
3.	Clarity of Presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of general physical examination					
7.	Whether all physical signs elicited correctly					
8.	Whether any major signs missed or misinterpreted					
9.	Diagnosis: Whether it follows logically from history and findings					
10	Investigations required ▪ Complete list					
	▪ Relevant order					
	▪ Interpretation of investigations					
11.	Ability to react to questioning Whether it follows logically from history and findings					
12.	Ability to defend diagnosis					
13.	Ability to justify differential diagnosis					
14.	Others					
	Grand Total					

Checklist – 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		

Log Book For M.Ch. Urology



NAME:

INSTITUTION:

CERTIFICATION FROM HEAD OF THE DEPARTMENT

Name :

Nature of Post :

Name of the Hospital / Institution :

Recognised by:
UNIVERSITY / MCI :

Number of Urological beds :

Number undergoing training :

Names of Approved trainers :

Signature of the Head of Department

Table I : Academic activities attended

Name: Admission Year:

College:

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

Table II : Academic presentations made by the student

Name: Admission Year:

College:

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

Table III : Diagnostic Procedures done from (Date To Date)

Date	Hospital Number	Procedure	P	S	AT	AJ	Total

P - Performed Independently

S - Done under Supervision

AT - Assisting Trainer

AJ - Assisting Junior Colleagues

Table IV: List of Operative Procedures to be performed by M.Ch.(Urology) Trainees

ENDOSCOPIC SURGERY

PROCEDURE	P	S	AT	AJ	TOTAL
Cystoscopy					
Stent Removal					
Retrograde Catheterisation					
Retrograde Pyelography					
Endoscopic Biopsy					
Clot Evacuation					
Ureteric Stenting					
Visual Internal Urethrotomy					
Endoscopic Removal of Foreign body					
Ureteric Meatotomy / Incision of Ureterocoele					
Diagnostic Ureterorenoscopy					
Fulguration of Posterior Urethral Valves					
Percutaneous Nephrolithotomy (PCNL)					
Transurethral Resection of Prostate (TURP)					
Transurethral Resection of Bladder Tumour					
Endoscopic Bladder Neck Suspension					
Therapeutic Ureterorenoscopy					
Diagnostic Laparoscopy					

P - Performed Independently

S - Done under Supervision

AT - Assisting Trainer

AJ - Assisting Junior Colleagues

Table V: List of Operative Procedures to be performed by M.Ch.(Urology) Trainees

OPEN SURGICAL PROCEDURES

Genital Surgery

PROCEDURE	P	S	AT	AJ	TOTAL
Dorsal Slit					
Circumcision					
Testicular Biopsy					
Hydrocoele & Spermatocoele repair					
Meatoplasty					
Orchidectomy					
Shunt for Priaprism					
Varicocoele ligation					
Partial Penectomy					
Penile Truama Exploration					
Total Penectomy					
Epididymovasostomy					
Single Staged Hypospadias repair					
Ileoinguinal Lymphadenectomy					
Penile Prosthesis Implantation					
Urethral Surgery					
Urethral dilatation					
Filiform dilatation					
Perineal Urethrostomy					
Urethrectomy					
Staged Urethroplasty					
Single Staged Urethroplasty					

Prostate Surgery

PROCEDURE	P	S	AT	AJ	TOTAL
Transrectal Biopsy					
Open Prostatectomy					
Radical Prostatectomy					
Nerve Sparing Prostatectomy					

P - Performed Independently
S - Done under Supervision
AT - Assisting Trainer
AJ - Assisting Junior Colleagues

List of Operative Procedures to be performed by M.Ch. (Urology) Trainees

Bladder Surgery

PROCEDURE	P	S	AT	AJ	TOTAL
Cystolithotomy					
Suprapubic Cystostomy					
Vesicostomy					
Bladder Trauma Repair					
Bladder Diverticulectomy					
Partial Cystectomy					
Augmentation Cystoplasty					
Open Bladder Neck Suspension					
Vesical Fistula Repair					
Total Cystectomy					

Ureterovesical Junction & Ureter

PROCEDURE	P	S	AT	AJ	TOTAL
Ureterolithotomy					
Ureteric Reimplantation					
Boari Flap Reimplantation					
Ureteral Fistula Repair					
Ureterorenoscopy					
Uretero-ureterostomy					
Ureteric Replacement					

Renal Surgery

PROCEDURE	P	S	AT	AJ	TOTAL
Open Kidney Biopsy					
Nephrostomy					
Perinephric Abscess Drainage					
Exploration of Renal Trauma					
Nephrectomy					
Pyelolithotomy					
Nephrolithotomy					
Pyeloplasty					
Anatrophic Nephrolithotomy					
Coagulum Pyelolithotomy					
Nephroureterectomy					
Radical Nephrectomy					
Partial Nephrectomy					
Renal Auto Transplantation					
Renovascular Reconstruction					

P – Performed Independently
S - Done under Supervision
AT - Assisting Trainer
AJ - Assisting Junior Colleagues

List of Operative Procedures to be performed by M.Ch. (Urology) Trainees

Transplantation Surgery

PROCEDURE	P	S	AT	AJ	TOTAL
Arteriovenous Fistula					
CAPD Catheter insertion					
Donor Nephrectomy					
Renal Transplantation					
Cadaver Organ Retrieval					
Graft Nephrectomy					

Adrenal Surgery

PROCEDURE	P	S	AT	AJ	TOTAL
Adrenalectomy					

Urinary Diversions

PROCEDURE	P	S	AT	AJ	TOTAL
Illeal Conduit					
Continent Diversions					
Orthotopic Neobladder					
Ureterosigmoidostomy					
Cutaneous Ureterostomy					
Mitrafanoff Procedure					
Benchekroun Procedure					

Miscellaneous Procedures

PROCEDURE	P	S	AT	AJ	TOTAL
Penile Reconstruction					
Retroperitoneal Lymphadenectomy					
Retroperitoneal Tumour Excision					
Ureterolysis & Transposition					
Diagnostic Laparoscopy					
Laparoscopic Nephrectomy					

P - Performed Independently
S - Done under Supervision
AT - Assisting Trainer
AJ - Assisting Junior Colleagues

Model Overall Assessment Sheet

Name of the College :
Academic Year:

Check List No	Particulars	Name of Student and Mean Score		
		A	B	C
1	Journal Review Presentations			
II	Seminars			
III	Clinical work in wards			
IV	Clinical presentation			
V	Teaching skill practice			
Total Score				

Note: Use separate sheet for each year.

Chapter V

Medical Ethics
Sensitisation and Practice

Introduction

There is now a shift from the traditional individual patient, doctor relationship, and medical care. With the advances in science and technology and the needs of patient, their families and the community, there is an increased concern with the health of society. There is a shift to greater accountability to the society. Doctors and health professionals are confronted with many ethical problems. It is, therefore necessary to be prepared to deal with these problems. To accomplish the Goal (i), General Objective (ii) stated in Chapter II (pages 9 and 10), and develop human values. It is urged that ***ethical sensitisation*** be achieved by lectures, group discussion, discussion of clinical cases with important ethical issues, during bedside rounds and in academic postgraduate programmes.

Course Contents

1. *Introduction to Medical Ethics*

What is Ethics?
What are values and norms?
Relationship between being ethical and human fulfilment
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 Intrafallopian Transfer (SIFT),
   Gamete Intrafallopian Transfer (GIFT), Zygote Intrafallopian Transfer (ZIFT),
   Genetic Engineering

6. *The Family and Society in Medical Ethics*
   The Ethics of human sexuality
   Family Planning perspectives
   Prolongation of life
   Advanced life directives – The Living Will
   Euthanasia
   Cancer and Terminal Care

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

8. *Research Ethics*
   Animal and experimental research / humanness
   Human experimentation
   Human volunteer research – Informed Consent
   Drug trials

9. *Ethical workshop of cases*
   Gathering all scientific factors
   Gathering all human factors
   Gathering all value factors
   Identifying areas of value – conflict, Setting of priorities,
   Working out criteria towards decisions

Recommended Reading

1. Francis C.M., Medical Ethics, 1 Ed, 1993, Jaypee Brothers, New Delhi, p 189, Rs.60/-.
2. Ethical Guidelines for Biomedical Research on Human Subjects, Indian Council of Medical Research, New Delhi, 2000.
3. Code of Medical Ethics, Medical Council of India, New Delhi, 2002.