بسم الله الرحمن الرحيم

CURRICULUM / STATUTES / REGULATIONS

FOR 5 YEARS MS UROLOGY

Faisalabad Medical University

Faisalabad

Contents

Section A

VISION STATEMENT:

Faisalabad Medical University has been established since 05-05-2017 for purpose of imparting better medical education and encouraging and arranging extensive research and publication in the field of medical science. The vision of university is:

"Striving to achieve national and international stature in undergraduate and postgraduate medical education with strong emphasis on professionalism, leadership, community health services, research and bioethics"

MISSION STATEMENT

The mission of the University is:

"Educate Healthcare professionals to prevent, diagnose and treat human illnesses to practice evidence-based medicine with focus on lifelong healthcare in order to meet the challenges of community needs and competitive medical profession at the same time"

STATUTES

Nomenclature

The name of degree program shall be MS Urology.

Course Title:

MS

Training Centers

Department of Urology in affiliated hospitals of Faisalabad Medical University, Faisalabad.

Duration of Course

The duration of course shall be five (5) years with structured training in a recognized department under the guidance of an approved supervisor.

Course structure:

1. **Core knowledge:** Competency based learning for trainees. 2 exams to be conducted by university. Continuous internal assessment to be included throughout the program which is conducted by the department which will carry weightage in final assessment.
2. **Clinical Training** in Urology
3. **Research and Thesis writing.**

4. **Mandatory Workshops** throughout the course of program will be conducted. The basic workshops will be attended by all trainees from Urology and will be evenly distributed throughout the course:

    1. **Communication skills**
    2. **Research synopsis and thesis writing skills**
    3. **Basic Biostatistics and Research Methodology**
    4. **Information Technology Skills**
    5. **Initial Life Support (ILS)**

At the end of each workshop, assessment will be done regarding the workshop and certificates will be issued to passing trainees only. The workshops will be conducted by the University and will be paid as in all post-graduate program and supervised by the department of Medical Education, FMU, Faisalabad. The trained certified coaches/teachers will be invited and they will get incentive from the university. All the interested trainers will contact the department for inclusion in trainers list.

Feedback of the facilitators will be recorded for the continuation of the process. Medical education department will issue yearly planner for these workshops in the light of curriculum document. University will certify it.

6. Specialty Specific workshops

Departments will conduct following workshop.

1. Basic surgical skills

The course is structured in three parts:

Part I: Candidate will start his/her training in Department of Urology from 1st day till 6 months. Candidate will gain basic knowledge of the Urology i.e., Anatomy, Physiology and orientation to the subject, basic principles, history taking and case presentation, inpatient and out-patient care. During this time the candidate will select a topic for synopsis, complete his/her synopsis.

Part II: A 6 months (7th month) till 2 years, he/she will do a rotational training in General surgery under a supervisor allocated in surgical department. The candidate shall undertake clinical training in fundamental concepts of general surgery from 7th months till 18 months. From month 19 to month 24, candidate will do three mandatory rotations as follows.

Orthopedics	2 months
Anesthesia	2 months
Any one from Pediatric surgery, Plastic surgery, Neurosurgery	2 months

During Part-II, the candidate must submit the synopsis for approval. At the end of 2nd year, the intermediate examination shall be held in fundamental concepts of General Surgery. The clinical training in Urology shall be rejoined from 3rd year onwards in Urology department.

Part III is structured for 3rd, 4th and 5th calendar years in MS Urology. The candidate shall undergo training to achieve educational objectives of MS Urology along with two mandatory rotations as follows.

Renal Transplantation	2 months
Nephrology	1 month

Section B:

Admission Criteria

Central induction Policy as per Government rules

Registration and Enrollment

The number of PG Trainees/ Students and Beds to trainee ratio at the approved teaching site will be as per policy of Pakistan Medical & Dental Council.

The University will approve supervisors for MS Urology.

Candidates selected for the courses after their selection and enrollment shall be registered with FMU as per prescribed Registration Regulation.

Accreditation Related Issues Of The Institution

A. Faculty

Properly qualified teaching staff in accordance with the requirements of Pakistan Medical and Dental Council (PMDC). Supervisors will be decided by the university according to the set standards and rules.

B. Adequate resources

The university will provide adequate resources Including class-rooms (with audiovisual aids), demonstration rooms, computer lab, clinical pathology lab, theaters, instruments and other equipment etc. for proper Training of the residents as per their course outcomes and objectives.

C. Library

Departmental library should have latest editions of recommended books, reference books and latest journals (National and International).

Freezing of Program and leave rules:

Freezing of training, Maternity leaves, Ex Pakistan Leaves and Extra Ordinary Leave etc. would be allocated through the office of Dean Post Graduate to the competent authority.

Section C:

AIMS AND OBJECTIVES OF THE COURSE

AIM

The aim of five years MS program in Urology is to train residents to acquire the competency of a specialist in Urology so that they can become good clinicians, teachers, researchers and community health provider in Urology after completion of their training according to the global standards.

LEARNING OBJECTIVES:

MS Urology training should enable a student to:

1. Access and apply relevant knowledge to clinical practice:

- Maintain currency of knowledge
- Apply scientific knowledge in practice
- Appropriate to patient need and context
- Critically evaluate new technology

2. Safely and effectively performs appropriate surgical procedures:

- Consistently demonstrate sound surgical skills
- Demonstrate procedural knowledge and technical skill at a level appropriate to the level of training
- Demonstrate manual dexterity required to carry out procedures
- Adapt their skills in the context of each patient and procedure
- Maintain and acquire new skills

- Approach and carries out procedures with due attention to safety of patient, self and others
- Critically analyze their own clinical performance for continuous improvement

3. Design and implement effective management plans:

- Recognize the clinical features, accurately diagnose and manage urological problems
- Formulate a well-reasoned provisional diagnosis and management plan based on a thorough history and examination
- Formulate a differential diagnosis based on investigative findings
- Manage patients in ways that demonstrate sensitivity to their physical, social, cultural and psychological needs
- Recognize disorders of the urological system and differentiate those amenable to surgical treatment
- Effectively manage the care of patients with urological trauma including multiple system trauma
- Effectively recognize and manage complications
- Accurately identify the benefits, risks and mechanisms of action of current and evolving treatment modalities
- Indicate alternatives in the process of interpreting investigations and in decision-making
- Manage complexity and uncertainty
- Consider all issues relevant to the patient
- Identify risk
- Assess and implement a risk management plan
- Critically evaluate and integrate new technologies and techniques.

4. Organize diagnostic testing, imaging and consultation as needed:

- Select medically appropriate investigative tools and monitoring techniques in a cost-effective and useful manner
- Appraise and interpret appropriate diagnostic imaging and investigations according to patients' needs
- Critically evaluates the advantages and disadvantages of different investigative modalities

5. Communicate effectively:

- Communicate appropriate information to patients (and their family) about procedures, potentialities and risks associated with surgery in ways that encourage their participation in informed decision making
- Communicate with the patient (and their family) the treatment options including benefits and risks of each
- Communicate with and co-ordinate health management teams to achieve an optimal surgical environment
- Initiate the resolution of misunderstandings or disputes
- Modify communication to accommodate cultural and linguistic sensitivities of the patient

6. Recognize the value of knowledge and research and its application to clinical practice:

- Assume responsibility for self-directed learning
- Critically appraise new trends in Urology
- Facilitate the learning of others.

7. Appreciate ethical issues associated with Urology:

- Consistently apply ethical principles
- Identify ethical expectations that impact on medico-legal issues
- Recognize the current legal aspects of informed consent and confidentiality
- Be accountable for the management of their patients.

8. Professionalism by:

- Employing a critically reflective approach to Urology
- Adhering with current regulations concerning workplace harassment
- Regularly carrying out self and peer reviewed audit
- Acknowledging and have insight into their own limitations
- Acknowledging and learning from mistakes

9. Work in collaboration with members of an interdisciplinary team where appropriate:

- Collaborate with other professionals in the selection and use of various types of treatments assessing and weighing the indications and contraindications associated with each type
- Develop a care plan for a patient in collaboration with members of an interdisciplinary team
- Employ a consultative approach with colleagues and other professionals
- Recognize the need to refer patients to other professionals.

10. Management and Leadership:

- Effective use of resources to balance patient care and system resources
- Identify and differentiate between system resources and patient needs
- Prioritize needs and demands dealing with limited system resources.
- Manage and lead clinical teams
- Recognize the importance of different types of expertise which contribute to the effective functioning of clinical team.
- Maintain clinically relevant and accurate contemporaneous records

11. Health advocacy:

- Promote health maintenance of patients
- Advocate for appropriate health resource allocation
- Promote health maintenance of colleagues and self-scholar and teacher

GENERAL OBJECTIVES

The objective of five years MS program in Urology is to train residents to acquire the competency of a specialist in the field so that they can become good safe surgeons, researchers and clinicians in Urology.

SPECIFIC LEARNING OUTCOMES AND CONTENT LIST

On completion of the training program, Urology trainees pursuing an academic pathway will be expected to have demonstrated competence in all aspects of the published syllabus. The specific training component would be targeted for establishing clearly defined standards of knowledge and skills required to practice Urology at secondary and tertiary care level with proficiency in the

basic and applied clinical sciences, intensive care and emergency (A&E) medicine related to Urology and complementary surgical disciplines.

Cognitive knowledge: Describe embryology, applied anatomy, physiology, pathology, clinical features, diagnostic procedures and the therapeutics including preventive methods, (medical/surgical) pertaining to Urology.

Clinical Decision Making & Management Expertise for the patient with:

- Stone disease
- Acute or chronic abdominal pain referable to the urinary tract
- Upper and lower urinary tract urinary tract obstruction
- Acute or chronic urinary retention
- Hematuria
- Urethral stricture
- Benign & malignant lesions of male genitalia.
- A scrotal swelling
- Urinary incontinence.
- Prostate cancer
- Bladder cancer
- Renal cancer
- Infertility, ejaculatory disorders, azoospermia
- Erectile dysfunction
- Penile deformity, priapism, penile fracture.
- The common urological conditions of childhood
- Renal failure
- Multiple injuries.
- Trauma of the renal tract according to accepted protocols.

Cognitive Skills:

- Evaluation and principles of management of a patient with hematuria (microscopic and gross)
- Evaluation of a patient with acute renal, bladder or urethral injury and principles of management
- Diagnosis and treatment of a patient with urinary infection including: acute cystitis and pyelonephritis, recurrent cystitis, persistent urinary tract infection, prostatitis (acute and chronic) and epididymo-orchitis.
- Diagnosis and management of a patient with a common urological malignancy including the treatment options for the various stages of carcinoma prostate, bladder, testis and kidney with an understanding of the multidisciplinary approaches to these disease processes including the palliative care of a patient with advanced stage metastatic carcinoma
- Diagnosis and management of a patient with urinary obstruction (prostatic, bladder neck or ureteric)

- Diagnosis and management options for a patient with urolithiasis (including acute renal colic and chronic renal calculi)
- Evaluation and diagnosis of the common paediatric urological problems including hydrocele, cryptorchidism, ureteropelvic junction obstruction and vesicoureteric reflux
- Evaluation and diagnosis of various forms of urinary incontinence
- Diagnosis and management of various scrotal masses including hydrocele, epididymal cysts, orchitis, testis tumor, varicocele, torsion testis or appendages
- Principles and practice of renal transplantation - including organ harvesting including multi-organ harvesting, organ preservation, implantation and immunosuppression
- Psychological and emotional aspects of urological diseases including the emotional implications of a diagnosis of malignant disease, anaesthetic hazards in the elderly and in the management of acute confessional states in the elderly, medical/legal and ethical issues arising in urological patients with respect to transplantation, infertility and impotence evaluation, and the awareness of the concept of body image in surgical patients.

Principles of Preoperative Assessment of the Surgical Patient

- Routine preoperative assessment of surgical patient with particular reference to patients with renal disease
- Assessment of patients with various co-morbidities (cardiac, pulmonary, renal and metabolic)

Emergency Urological Care:

- Examination and management of a patient in shock (septic due to urinary infection vs. Hypovolemic, neurogenic, cardiogenic shock)
- Management of the patient with an acute ureteric colic
- Management of the patient with acute urinary infection including a patient with urosepsis.
- Management of a child with an acute scrotum
- Principles of management of a patient with urological trauma
- Suprapubic catheterization
- Emergency management of patients with hematuria

Renal Transplantation:

- Immunosuppression (including principles of management of rejection)
- Recipient selection
- Donor Selection
- Relevant transplantation immunology

Congenital and Developmental Abnormalities

- Cystic diseases of the kidney
- Horseshoe kidney and other renal anomalies

- Scrotal and external genital anomalies
- Vesicoureteral reflux
- Epispadias and extrophy
- Hypospadias and chordee
- External genital anomalies
- Intersex
- Undescended testis
- Scrotal and external genital anomalies
- Other anomalies

Obstructive Disease of the Upper Urinary Tract
- Obstructive uropathy, hydronephrosis and obstructive renal failure
- Ureteropelvic junction obstruction

Obstructive Disease of the Lower Urinary Tract
- Bladder outflow obstruction
- Benign prostatic hypertrophy
- Lower urinary tract symptoms ("LUTS")
- Renal and ureteral calculi
- Bladder calculi
- Posterior urethral valves
- Functional obstruction secondary to neurological disorders

Trauma
(Including the management and evaluation of a patient with multisystem trauma involving the GU Tract and the role of the urologist in multidisciplinary approach to multisystem trauma)
- Renal trauma
- Ureteral trauma
- Vesical trauma
- Urethral trauma
- External genital trauma

Urological Oncology
- For tumors (benign and malignant) of the genito-urinary tract, etiology, prevention, nutritional and environmental aspects of urologic malignant disease, including the natural history, histology and pathology.
- Cancer of the kidney
- Cancer of Urinary Bladder
- Cancer of the prostate
- Cancer of the testis

Voiding Disorders including Relevant Neuro-urology

- Urinary incontinence (including stress urinary incontinence, urgency incontinence, total incontinence)
- Voiding dysfunction due to neurological disease
- Enuresis

Urinary and Genital Infections and Sexually Transmitted Disease

- Bacterial (complicated and uncomplicated) and non-bacterial cystitis and urethritis
- Pyelonephritis and other renal infections
- Prostatitis including prostatodynia
- Genito-urinary tuberculosis
- Fungal/yeast urinary tract infections
- Other granulomatous infections (including xanthogranulomatous pyelonephritis) (XGP)
- Other genital infections (including Fournier's gangrene)

Systemic Diseases and Other Processes Affecting the Urinary Tract

- Urological manifestations of systemic diseases (including e.g., diabetes mellitus, sepsis, AIDS, immunocompromised or immune-incompetent patients)
- The urinary tract in pregnancy (including normal physiologic and anatomic changes and management of urinary tract problems in the pregnant patient)

Renovascular Hypertension

- Surgically correctable hypertension

Andrology

- Male sexual function and dysfunction
- Fertility and male factor infertility

Adrenal Diseases

- Evolution of incidentelomas
- Adrenal cysts, hyperplasia
- Adrenal hyperfunction and hypofunction and associated syndromes

Male Sexual Function and Dysfunction

- Fertility and male factor infertility

Miscellaneous

- External genital problems (including hydrocele, varicocele, spermatocele, cysts)
- Torsion of testis, cord and appendages
- Dermatological lesions of the male external genitalia (including benign, pre-malignant and malignant lesions)
- Interstitial cystitis

- Male sexual dysfunction

Technical Skills & Procedures
Technical Skills:
- Catheterization including urinary catheter care.
- Urethral manipulation and dilatation
- Cystoscopy
- Installation of intravesical therapeutic agents
- Wound closure

- Vasectomy (if resident is so interested)
- Introduction to therapeutic technologies including electrosurgery, Extracoporeal Shock Wave Lithotripsy, lasers in urology (carbon dioxide, Nd/YAG, Holmium-YAG).

Diagnostic Skills:
- Urinalysis, including routine urinalysis, urine culture techniques, urinary collections for metabolic studies and urine cytologic studies
- Renal function tests
- Adrenal function tests
- Tumor markers – e.g., alpha-feto protein, b-HCG, PSA, etc.
- Radiological Studies Including intravenous excretory urography voiding cystourethrography
- Ultrasonography – including Doppler studies
- Radioisotope Studies
- CT scanning and MRI Scanning of the urinary tract
- Intravenous excretory urography
- Voiding cystourethrography

Endoscopic Procedures:
- Cystoscopy and urethroscopy, ureteric catheterization including ureteric stent insertion and removal, retrograde pyelography
- Urethral dilatation and visual internal urethrotomy
- Transurethral biopsy of bladder and urethra
- Transurethral resection of prostate
- Urethral dilatation and visual internal urethrotomy
- Transurethral biopsy of bladder and urethra
- Transurethral resection of prostate
- Transurethral resection of bladder tumors
- Ureteroscopy and lithotripsy of ureteric calculi
- Transurethral resection/ incision of ureterocele
- Ureteroscopy and lithotripsy of ureteric calculi
- Percutaneous renal surgery including nephrolithotomy with ultrasound / electrohydraulic / laser lithotripsy

Open Surgical Procedures:

- Circumcision
- Suprapubic catheterization
- Fulguration of venereal warts, biopsy of penile lesions
- Cavernosal shunting procedures for priapism
- Testis biopsy
- Bipolar TURP
- Vasovasostomy
- Vasectomy
- Scrotal surgery - hydrocele, epididymal cyst, epididymectomy, simple orchidectomy
- Inguinal surgery - varicocele, herniotomy, orchidopexy
- Radical orchidectomy
- Repair of testis torsion
- Orchidopexy for undescended testis
- Insertion testis prosthesis

- Vesical neck suspension and procedures for stress urinary incontinence
- Pelvic lymphadenectomy
- Simple retropubic prostatectomy

Therapeutic Technologies

- The resident will be able to describe the basic physics and technological application of the following therapeutic modalities. He/she will be able to describe the indications, contraindications, peri-operative and post- operative complications specific for each modality:
- Electrosurgery
- Extracoporeal Shock Wave Lithotripsy
- Lasers in urology - carbon dioxide, Nd/YAG, Holmium-YAG, etc.
- Management of patients with benign prostatic hyperplasia
- Prostatic thermotherapy

Section D:

PROGRAMME FORMAT

SCHEME OF THE COURSE OF MS UROLOGY PROGRAM

A summary of five years course in MS Urology is presented as under:

Course Structure	Components
Part- I	Basic knowledge of the Urology i.e., Anatomy, Physiology and orientation to the subject, basic principles, history taking and case presentation, inpatient and out-patient care. Selection of topic for synopsis and complete his/her synopsis For first 6 months
Part- II	Core knowledge in Surgery: Training in clinical techniques of Surgery with first two mandatory workshops and basic surgical skill workshop and mandatory three rotations. Synopsis is to be submitted at the end of 2nd year
Part- III	**Clinical component of Part III** • Professional Education in Urology: Training in Urology during 3rd, 4th & 5th year of MS Urology program. Three years of training with remaining compulsory workshops and two mandatory rotations.

	Research component of Part III • Research and Thesis Writing: Research work/Thesis writing project must be completed and thesis be submitted before the end of training.

Rotations:

Urology trainees will do three rotations in Part-II and two mandatory rotations during Part-III training.

Serial no.	Rotation Title	Duration	Placement
1	Orthopedic Surgery	2 months	Part-II
2	Anesthesia	2 months	Part-II
3	Any one from Plastic Surgery, Pediatric Surgery, Neurosurgery	2 months	Part-II
4	Renal Transplantation	2 months	Part- III
5	Nephrology	1 month	Part- III

Section E:

Assessment Plan:

Program duration	Course contents	Assessment method
At the end of 2nd year of program	1. Revision of core MBBS component including basic and clinical components. 2. Basic knowledge and Acquiring skill related to the specialty according to the objectives made. 3. First 2 mandatory Workshops as described in course outline. 4. Three mandatory rotations 5. Submission of synopsis	**Intermediate Examination:** to be taken by university. It will include: a) Written=300 b) TOACS/OSCE /LONG-CASE/ SHORT CASE=300 **Total Marks =600**
At the end of 5th year	1. Training to act as an individual while managing patient or performing any task as defined by the objectives.	**Final Examination** to be conducted by university.

	2. Training to act as a teacher, researcher, leader and a player in a team. 3. Overall development of a health care professional with all the set competencies of the Program. 4. All the mandatory and Urology oriented workshops to be completed as mentioned in the curriculum 5. Rotations as described in the curriculum completed 6. Thesis completion and submission	It will include: a) Written=300 b) TOACS/OSCE/LONG CASE/SHORT CASE=300 c)Continuous internal assessment=100 Thesis evaluation =300 **Total marks=600+100+300=** **1000**

Components of Intermediate Examination

- Written: Total Marks =300
- Clinical, TOACS/OSCE = 300

Total = 600

Components of Final Examination:

- Written: 300 Marks
- Clinical, TOACS/OSCE = 300 Marks

- Continuous internal assessment =100
- Thesis Evaluation = 300 Marks

Total = 1000 Marks

Intermediate Examinations:

Intermediate examination would be conducted for the candidate getting training, at the end of 2nd calendar year of the program.

Eligibility Criteria:

1. Candidate remained on institution roll during the period approved for appearing in examination.
2. Certificate of completion of first two mandatory workshops (Communication skills, Research synopsis and thesis writing skills) and basic surgical skills workshop.
3. Certificate of completion of three mandatory rotations
4. Completion of Log book signed by supervisor/concerned Head of Department.
5. Certificate of submission of Ethical Review Committee approved synopsis to the university if required as per rules of synopsis submission.
6. Evidence of payment of examination fee as prescribed by the University from time to time.
7. Certificates submitted through Principal/Dean/Head of academic institution shall be accepted as valid towards the candidature of an applicant.
8. Submission of application for the examination and the conduct of examination.

Intermediate Examination Schedule and Fee:

a) Intermediate Examination at completion of two years training, will be held twice a year.

b) There will be a minimum period of 30 days between submission of application for the examination and the conduction of examination.

c) Examination fee will be determined periodically by the University.

d) The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.

e) The Controller of Examinations will issue Roll Number Slips on receipt of prescribed application form, documents satisfying eligibility criteria and evidence of payment of examination fee.

Written Examination:

The written examination will consist of 100 single best answer type Multiple Choice Questions. Each correct answer in the multiple-choice question paper will carry 02 marks. The short essay question will be clinical scenario or practice based, and each question will carry 10 marks.

The marks of written exam will be divided as follows:

- MCQs (100x2) (single best type) = 200 Marks
- SEQ (10) (10 marks) =100

Declaration of Results

The candidates scoring 60% marks in the written examination will be considered pass and will then be eligible to appear in the clinical and oral examination.

Clinical, TOACS/OSCE:

The clinical and TOAC/OSCE & Oral examination will evaluate patient care competencies in detail,

The examination will be of 300 total marks consisting of the following components

Clinical, TOACS/OSCE = Total Marks 300

a) 2 short Cases (50 each) = 100 marks

b) 1 Long Case = 100 marks

c) TOACS/OSCE & ORAL =100 marks (10 stations with 10 marks each)

- Each short case will be of 10 minutes duration, 05 minutes will be for examining the patient and 05 minutes for discussion.

- The long case and oral examination will each be of 30 minutes duration (Total 1 hour).

Declaration of Results

- A student scoring 60% in long case, 60% in short cases ad 60% in TOACS/OSCE will be considered pass in the examination.
- A maximum total of four consecutive attempts (availed or un availed) will be allowed in the Intermediate Examination during which the candidate will be allowed to continue his training program. If the candidate fails to pass his Intermediate Examination within the above-mentioned limit of four attempts, the candidate shall have to take entire intermediate examination including written examination again.

Final Examination

At the end of 5th Calendar year of the program

Eligibility Criteria:

To appear in the Final Examination the candidate shall be required:

1. Result card showing that the candidate has passed intermediate Examination.
2. Certificate of completion of 5 Years training duly signed by Supervisor, Head of parent Department and that of the Head of Department where rotations were done.
3. Evidence of thesis submission to Department of Examination of the University.
4. Evidence of payment of examination fee as prescribed by the university from time to time.
5. The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.
6. Candidate remained on institution roll during the period required for appearing in examination.
7. Only those certificates, submitted through Principal/Dean/Head of academic institution shall be accepted.

Final Examination Schedule and Fee:

a) Final examination will be held twice a year i.e. at least six months apart.
b) Examination fee will be determined and varied at periodic intervals by the University.
c) The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.
d) The Controller of Examinations will issue an Admittance Card with a photograph of the candidate on receipt of prescribed application form, documents satisfying eligibility criteria and evidence of payment of examination fee. This card will also show the Roll Number, date / time and venue of examination.

Written Part of Final Examination

a) The written examination will consist of 100 single best answer type Multiple Choice Questions (MCQs) and 10 Short Essay Questions (SEQs). Each correct answer in the

Multiple-Choice Question paper will carry 02 marks. Each Short Essay Question will carry 10 marks.

b) The Total Marks of the Written Examination will be 300 and to be divided as follows:

- Multiple Choice Question paper Total Marks (100x2) = 200
- Short Essay Question paper Total Marks (10x10) = 100

Total=300

Paper 1

- MCQs 100 (2marks each)

Paper 2

- SEQs 10 (10 marks each)

a. Paper 1 shall comprise of hundred (100) "single best answer" type Multiple Choice Questions. Each Question shall carry 02 marks.

b. Paper 2 shall comprise of ten (10) Short Essay Questions, each carrying 10 marks.

Declaration of Results

c. The candidates scoring 60% marks in aggregate of Paper 1 and Paper 2 of the written examination will be declared pass and will become eligible to appear in the Clinical Examination.

Clinical, TOACS/OSCE:

a) The Clinical Examination will consist of 04 short cases, 01 long case and TOACs/OSCE with 01 station for a pair of Internal and External Examiner. Each short

case will be of 10 minutes duration, 05 minutes will be for examining the patient and 05 minutes for discussion.

b) The Total Marks of Clinical and TOACs/OSCE & Oral will be 300 and to be divided as follows:

- Short Cases (4)(4X25) Total Marks = 100
- Long Case (1) Total Marks = 100
- TOACS/OSCE & ORAL Total Marks = 100

Total= 300

Declaration of Results

- A student scoring 60% in long case, 60% in short cases and 60% in TOACS/OSCE will be considered pass in the examination.
- Candidate, who passes written examination, shall be allowed a maximum of Three availed attempts within 2 years to pass Clinical/Oral examination. However, in case of failure to pass Clinical examination within stipulated attempts the credit of passing the written examination shall stand withdrawn and candidate shall have to take entire examination including written examination, afresh. Candidate who has completed his or her training along with all the requirements mentioned in the curriculum shall have to appear in the written of final examination at least once within period of 8 years (from the time of induction in the training). Failure to compliance with this, the matter will be referred to the competent authority through proper channel for final decision.

Synopsis and Thesis Writing:

Thesis writing must be completed and thesis be submitted at least 6 months before the end of final year of the program.

Thesis evaluation & defense will be carried out at the end of 5th calendar year of MS.

Submission / Evaluation of Synopsis

a) The candidates shall prepare their synopsis as per guidelines provided by the Advanced Studies & Research Board, available on the university website.

b) The research topic in clinical subject should have 30% component related to basic sciences and 70% component related to applied clinical sciences. The research topic must consist of a reasonable sample size and sufficient numbers of variables to give training to the candidate to conduct research, to collect & analyze the data.

c) Synopsis of research project shall be submitted by the end of the 2nd year of MS program. The synopsis after review by an Institutional Review Committee, shall be submitted to the University for consideration by the Advanced Studies & Research Board, through the Principal / Dean /Head of the institution.

Submission and evaluation of Thesis Evaluation (300 Marks)

1. The Thesis shall be submitted to the Controller of Examination through Head of Institute, duly signed by the Supervisor, Co-Supervisor(s) and Head of the Department.
2. Submission of Thesis is a prerequisite for taking Final Theory Examination.
3. Examiners shall be appointed by the Vice chancellor on recommendation of Controller of Examination from a panel approved by Advance Studies & Research Board for evaluation of thesis.
4. All MS thesis shall be evaluated by two examiners, one internal & one external (The supervisor must not be the evaluator)
5. Thesis defense shall be held after approval of evaluation reports by Advanced Studies & Research Board.
6. Thesis defense shall be conducted by the external examiners who evaluated Thesis of the candidate.
7. The candidate scoring 60% marks in Thesis defense examination will be declared as pass in the examination.

Continuous Internal assessment

It will consist of professional growth oriented student-centered integrated assessment with an additional component of formative assessment and measurement-based summative assessment.

Attendance

- Students joining postgraduate training program shall work as full-time residents during the duration of training maximum 2 leaves are allowed in one month, and should take full responsibility and participation in all facets of the educational process. The period of training for obtaining degrees shall be four completed years

Presentations

- In addition to the conventional teaching methodologies interactive strategies will also be introduced to improve both clinical and communication skills in the upcoming consultants. Presentations must be conducted regularly as scheduled and attended by all available faculty and residents. As a policy, active participation of the postgraduate resident will be encouraged. Proper written feedback will be given for these presentations and that will be a part of Resident's Portfolio as well. Reflection of the events to be written by the residents as well and must be included in their portfolios.

Task evaluation

- This competency will be learned from journal clubs, review of literature, policies and guidelines, audit projects, medical error investigations, root cause analysis and awareness of healthcare facilities. Active participation and ability to fulfill given tasks will be encouraged. Written feedback must be given and documented to be included in portfolio

Continuous Internal Assessment format (100 Marks)

1. The award of continuous internal assessment shall be submitted confidentially in a sealed envelope.
2. The supervisor shall submit cumulative score of internal assessment of all training years to be added together to provide a final cumulative score of Continuous Internal Assessments of all the trainees to the Head of the Department/ Dean of Post Graduate studies.
3. The Head of Department/ Dean shall submit the continuous internal assessment score through the Principal/ Registrar office to the Examination Department of the University. Score of continuous internal assessment once submitted shall be final and cannot be changed subsequently under any circumstances.
4. The weightage of internal assessment in the final examination will be 10%.
5. Continuous Internal Workplace Based Assessments will be done by the supervisors, that may be based on but not limited to:
    a. Generic and Specialty Specific Competency Assessments
    b. Multisource Feedback Evaluations
    c. Assessment of Candidates' Training Portfolio

TOOLS OF ASSESSMENT FOR THE COURSE:

TOOL USED:	DOMAIN TESTED:
MCQs	Knowledge
SEQs	Knowledge
TOACS/OSCE	Knowledge. Skill

	Attitude
PRESENTATIONS (wards, seminars, conferences, journal clubs)	Knowledge. Skill Attitude
Portfolios and log books.	Skill Attitude
Short cases.	Knowledge Skill Attitude
Long cases	Knowledge Skill Attitude
Continuous internal assessment	Skill

	Attitude
Feedback from department where rotation is being conducted.	Knowledge Skill Attitude

Section F

Award of MS Urology Degree

A candidate having declared successful in all the components of examination i.e. Theory, Clinical and Thesis shall be declared pass and shall be conferred degree in MS Urology

Section G:

Log Book

As per format approved by the university (Available at university website)

Section H

Portfolio:

As per format approved by the university

Section I

Paper Scheme

Intermediate Examination

Written:

70 % general Surgery and mandatory rotation

30 % from specialty oriented (Urology)

Sr No.	TOPIC	NUMBER OF MCQs	LEVEL	NUMBER OF SEQ
1	Surgical Anatomy of genitourinary tract	1	C-1	-
2	Physiology of urinary system / complete urine examination	1	C-1	-
3	Urological investigation	2	C-1	-
4	Urolithiasis	5	C-2	1
5	Pediatric Urology	2	C-2	-
6	Renal tumor	2	C-2	1
7	Upper tract urothelial carcinoma	1	C-2	-
8	Urinary Bladder tumor	2	C-2	-

9	Prostate carcinoma	1	C-3	-
10	Benign prostatic hyperplasia	3	C-2	1
11	Renal transplantation	1	C-2	-
12	Urinary tract infection	2	C-2	1
13	Urinary tract trauma	3	C-2, C-3	1
14	Stricture urethra	2	C-2	1
15	Male infertility	2	C-2	-
	Total	30		Any 3

TOACS/OSCE Stations Distribution:

Short case: 2

Surgery and mandatory rotation: 1

Urology: 1 (Hypospadias, AV fistula, supra pubic catheter, Percutaneous nephrostomy)

Long case: 1

Any one from following

Urolithiasis, renal tumor, urinary bladder tumor, bladder outlet obstruction

Final Examination

Written:

MCQ: 100

SEQ: 10

Sr No.	TOPIC	NUMBER OF MCQs	LEVEL	NUMBER OF SEQ
1	Surgical Anatomy of genitourinary tract	1	C-1	-
2	Physiology of urinary system / complete urine examination	2	C-1	-
3	Urological investigation	4	C-1	1
4	Urolithiasis	10	C-1, C-2, C-3	1
5	Pediatric Urology	9	C-1, C-2, C-3	1
6	Renal tumor	6	C-1, C-2, C-3	1
7	Upper tract urothelial carcinoma	6	C-1, C-2, C-3	1

8	Urinary Bladder tumor	10	C-1, C-2, C-3	1
9	Prostate carcinoma	6	C-2, C-3	1
10	Benign prostatic hyperplasia	11	C-2, C-3	1
11	Renal transplantation	5	C-2, C-3	1
12	Urinary tract infection	8	C-2, C-3	1
13	Urinary tract trauma	7	C-2, C-3	1
14	Stricture urethra	4	C-2, C-3	1
15	Male infertility	6	C-1, C-2, C-3	1
16	Neuro-Urology	3	C-2, C-3	1
17	Female Urology	2	C-2, C-2	1
	Total	100		Any 10

TOACS/OSCE Stations Distribution:

Interactive station, static stations

Short case: 4

Renal transplantation, Hypospadias, AV fistula, supra pubic catheter, Percutaneous nephrostomy, hydrocele, inguinal hernia, epididymal cyst, spermatocele, undescended testis, testicular tumor, exstrophy bladder complex, varicocele

Long case: 1

Any one from following

Urolithiasis, bladder outlet obstruction, urogenital tuberculosis, pediatric urology, PUJ obstruction, testicular tumor, renal transplantation, female urology, andrology and male infertility, uro-oncology, urinary tract infections, adrenal gland tumors, urinary diversions

Section J

Resources and references (books and other resource material)

- Bailey & Love Short practice of surgery.
- Essential Surgical Practice by Cuschieri
- Smith & Tanagho's General Urology
- Campbell-Walsh Wein Urology
- Oxford handbook of Urology
- EAU (European association of Urology) Guidelines

Section K

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