
**CURRICULUM / STATUTES & REGULATIONS
FOR
4 YEARS DEGREE PROGRAMME
IN
OBSTETRICS AND GYNAECOLOGY
(MS Obstetrics and Gynaecology)**



UNIVERSITY OF HEALTH SCIENCES, LAHORE

STATUTES

Nomenclature of The Proposed Course

The name of degree programme shall be MS Obstetrics and Gynaecology. This name is well recognized and established for the last many decades worldwide.

Course Title:

MS Obstetrics and Gynaecology

Training Centers

Departments of Obstetrics and Gynaecology (accredited by UHS) in affiliated institutes of University of Health Sciences Lahore.

Duration of Course

The duration of MS Obstetrics and Gynaecology course shall be four (4) years with structured training in a recognized department under the guidance of an approved supervisor.

After admission in MS Obstetrics and Gynaecology Programme the resident will spend first 6 Months in the Department of Obstetrics and Gynaecology as **Induction period** during which resident will get orientation about the chosen discipline and will also participate in the **mandatory workshops** (Appendix E). The research project will be designed and the **synopsis** be prepared during this period.

On completion of Induction period the resident will start formal training in the Basic Principles of General Surgery for 06 Months. At the end of one calendar year, the candidate will take up Abridged Examination.

During the 2nd, 3rd & 4th years, of the Program, there will be two components of the Programme. The Research Synopsis must be got approved by AS&RB of the university within first 2 years of the Programme.

- 1) Clinical Training in Obstetrics and Gynaecology
- 2) Research and Thesis writing

The resident will undergo clinical training to achieve the educational objectives of MS Obstetrics and Gynaecology Programme (knowledge & Skills) alongwith rotation in relevant fields during the 3rd year of the programme such as

Neurology, Infectious Diseases and Family Planning. The clinical training shall be competency based. There shall be generic and specialty specific competencies assessed by continuous Internal Assessment. (Appendix F&G). The Research Component and thesis writing shall be completed over the four years duration of the Programme. Candidates will spend total time equivalent to one calendar year for research during the training. Research can be done as one block or in regular periodic rotation as long as total research time is equivalent to one calendar year.

Admission Criteria

Applications for admission to MS Training Programs will be invited through advertisement in print and electronic media mentioning closing date of applications and date of Entry Examination.

Eligibility: The applicant on the last date of submission of applications for admission must possess the:

- i) Basic Medical Qualification of MBBS or equivalent medical qualification recognized by Pakistan Medical & Dental Council.
- ii) Certificate of one year's House Job experience in institutions recognized by Pakistan Medical & Dental Council Is essential at the time of interview. The applicant is required to submit House Certificate from the concerned Medical Superintendent that the House Job shall be completed before the Interview.
- iii) Valid certificate of permanent or provisional registration with Pakistan Medical & Dental Council.

Registration and Enrollment

- As per policy of Pakistan Medical & Dental Council the number of PG Trainees/ Students per supervisor shall be maximum 05 per annum for all PG programmes including minor programmes (if any).
- Beds to trainee ratio at the approved teaching site shall be at least 5 beds per trainee.
- The University will approve supervisors for MS courses.
- Candidates selected for the courses after their enrollment at the relevant institutions shall be registered with UHS 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)

B. Adequate Space

Including class-rooms (with audiovisual aids), demonstration rooms, computer lab and clinical pathology lab etc.

C. Library

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

- Accreditation of Obstetrics and Gynaecology training program can be suspended on temporary or permanent basis by the University, if the program does not comply with requirements for residents training as laid out in this curriculum.
 - Program should be presented to the University along with a plan for implementation of curriculum for training of residents.
 - Programs should have documentation of residents training activities and evaluation on monthly basis.
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- To ensure a uniform and standardized quality of training and availability of the training facilities, the University reserves the right to make surprise visits of the training program for monitoring purposes and may take appropriate action if deemed necessary.

AIMS AND OBJECTIVES OF THE COURSE

AIM

The aim of four years MS programme in Obstetrics and Gynaecology is to train residents to acquire the competency of a specialist in the field so that they can become good teachers, researchers and clinicians in their specialty after completion of their training.

GENERAL OBJECTIVES

MS Obstetrics and Gynaecology 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 gynaecological as well as obstetric 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 nervous system and differentiate those amenable to surgical treatment
- Effectively manage the care of patients with gynaecological or obstetric 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 Obstetrics and Gynaecology
- Facilitate the learning of others.

7. Appreciate ethical issues associated with Obstetrics and Gynaecology:

- 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 Obstetrics and Gynaecology

- 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

SPECIFIC LEARNING OUTCOMES

On completion of the training programme, Obstetrics and Gynaecology 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 Obstetrics and Gynaecology at secondary and tertiary care level with proficiency in the Basic and applied clinical sciences, Basic gynaecological and obstetric care, intensive care, Emergency (A&E) medicine and Complementary surgical disciplines.

1. Describe embryology, applied anatomy, physiology, pathology, clinical features, diagnostic procedures and the therapeutics including preventive methods, (medical/surgical) pertaining to Obstetrics and Gynaecology surgery
2. Develop clinical skills in the medical interview and physical examination in both obstetrical and gynecological patients
3. Understand the physiological, physical and psychological change during pregnancy, labour and puerperium
4. Understand the development of the foetus from conception to term
5. Develop skill in identifying the needs of the mother during ante natal, intranatal and post natal period and promote positive health in normal and high risk cases.
6. Develop skill in conducting normal labour and identify any major deviations from normal.
7. Develop skill in giving care to the high-risk neonates, small for date & premature infants.

8. Identify menstrual disorders, pelvic inflammatory diseases and infertility cases and provide comprehensive care.
9. Extend maternal and child health to families and counsel couples regarding acceptance of family planning measures.

10. Be able to develop a broad differential diagnosis for a patient with an "acute abdomen" including conditions such as pelvic infection, ectopic pregnancy, adnexal torsion, appendicitis, diverticulitis, urinary calculi
11. Become aware of population health; recognize social and health policy aspects of women's health, ethical issues, sterilization, abortion, domestic violence, adolescent pregnancy, and access to health care
12. Demonstrate newer knowledge about gynaecological or obstetric diseases in general, including technological (laser) and pharmacologic advances (medicines) and newer method of therapy for certain conditions
13. Acquire knowledge about radiology/imaging and to interpret different radiological procedures and imaging procedures in Obstetrics and Gynaecology – There should be collaboration with Radiology department for such activities

Specialized training in:

- **Anatomy & Embryology:** Review of external and internal female and male genital organs
- Anatomy of pelvic floor
- Female pelvis-structure measurement and deviation
- Fertilization and maturation of ovum, embedding of zygote.
- Placenta – development, type, abnormalities and functions
- Foetal development and foetal circulation.
- Foetal skull and its measurement

- Influence of hereditary factors on growth & development of foetus and health of newborn
- Normal development and pubertal changes in human breast
- Hormonal influences on breast development
- Cell proliferation and hormone receptors
- Morphology, blood supply and lymphatic drainage of the breast
- Changes during pregnancy, lactation and Menopause
- Abnormalities in breast development
 - Congenital
 - Acquired
- **Physiology:** Physiology of normal menstruation
- Physiological changes during pregnancy – anatomical, hormonal and biochemical
- Signs symptoms and diagnosis of pregnancy – clinical, biophysical, biochemical and hormonal
- Psychosocial aspects
- **Antenatal care** – assessment, general and obstetrical examination, pelvic examination, nutrition, antenatal exercises, mother craft.
- Minor ailments of pregnancy.
- Aspects of preventive obstetrics.
- **Normal labour**
 - Onset, physiological changes & psychological aspects of labour
 - Mechanism, induction and augmentation of labour
 - Monitoring & use of partogram and cervicograph
 - Observation and clinical diagnosis of patient in different stages of labour.
 - Episiotomy and care
 - Analgesics and anaesthesia in labour
- **Normal puerperium**
 - Physiological changes during puerperium
 - Care during puerperium – mother, neonate and family
 - Physiology of lactation and establishment of lactation and breast feeding
 - Post-natal-care – post natal exercises, follow up care.
 - Customs and beliefs in relation to confinement and puerperium
- **New Born**
 - Resuscitation &, immediate care of new born.
 - Normal characteristics and care of the new born
 - Asphyxia neonatorum, respiratory distress

- Jaundice in new born
- Haemorrhagic diseases of the newborn
- Convulsions in new born
- Birth injuries, congenital anomalies, infection of the newborn, vomiting in new born.
- Still birth – incidence, causes and prevention
- Care of Low birth weight babies in labour room and nursery
- **High risk pregnancy**
 - Hyperemesis gravidarum
 - Hydramnios
 - Multiple pregnancy
 - Premature rupture of membrane and preterm labour
 - Intrauterine growth retardation
 - Post-date pregnancy
 - Abnormal Uterine Action
 - Medical conditions associated with pregnancy:
 - Anaemia in pregnancy
 - Heart disease in pregnancy
 - Pregnancy induced hypertension
 - Venous thromboembolism
 - Rh Incompatibility and amniocentesis
 - Diabetes in pregnancy
 - Pyelonephritis
 - Infections, sexually transmitted diseases in pregnancy
 - General surgery during pregnancy
- **Gynaecological conditions in pregnancy :**
 - Ca cervix with pregnancy
 - Fibroid with pregnancy
 - Ovarian tumour in pregnancy
 - Retroverted gravid uterus
 - Genital prolapse in pregnancy
- **Complications in pregnancy**
 - Bleeding in early pregnancy
 - Abortion, types, complication and management
 - Ectopic pregnancy
 - Trophoblastic tumours

- Ante partum haemorrhage
- Placenta praevia
- Abruption placenta
- Hydatidiform mole
- Pregnancy induced hypertension (Pre eclampsia and eclampsia)
- Intrauterine death
- Induction of labour, Preterm labour and Post maturity
- Induction of labour – Medical, surgical, combined
- Preterm labour
- Premature rupture of the membrane
- Post maturity
- Intrauterine foetal death
- **Malposition, Malpresentation and Cord prolapse**
 - Occipito-posterior position – causes, diagnosis, antenatal care, course of labour and management
 - Breech presentation – causes, diagnosis, types, antenatal care, course of labour and management
 - Face and brow presentation – causes diagnosis, antenatal care, course of labour, and management
 - Transverse lie, unstable lie
 - Compound presentations
 - Cord prolapse
 - Prolonged labour, obstructed labour, dystocia caused by foetal anomalies
 - Destructive operations
- **Abnormalities of Puerperium**
 - Puerperal pyrexia and puerperal sepsis
 - Puerperal venous thrombosis, thrombophlebitis, pulmonary embolism
 - Urinary complications in puerperium
 - Post partum haemorrhage
 - Other puerperal emergencies
 - Subinvolution, obstetric palsies
 - Breast complications – Breast engorgement, breast abscess, acute mastitis cracked & retracted nipples, suppression of lactation
 - Psychiatric disturbances in puerperium
 - Obstetrical emergencies and operative obstetrics 5 Hrs
 - Uterine rupture, cervical tear, inversion of uterus
 - Obstetrical hysterectomy
 - Dilatation and evacuation

- Suction evacuation
- Use of instruments – forceps, ventouse, Versions
- Caesarean section
- **Special cases**
 - Pregnancy with previous history of Caesarean section
 - Pregnancy in Rh-negative woman
 - Elderly primigravida
 - Grand multipara
 - Bad obstetric history
 - Complications of third stage of labour
 - Contracted pelvis
 - Abnormal uterine action
- **Pharmacotherapeutics**
 - Oxytocics and prostaglandins used in obstetrics
 - Indications and contraindications of rationale drugs in pregnancy
- **Gynaecological history taking and examination**
- **Menstrual disorders**
 - Amenorrhoeas
 - Cryptomenorrhoea, oligomenorrhoeas
 - Hypomenorrhoea, dysmenorrhoea
 - Metrorrhagia, menorrhagia
 - Dysfunctional uterine bleeding
 - Menopause and hormonal replacement therapy (HRT)
- **Common genital infection**
 - Fungal infections – Vaginal discharges
 - Acute and chronic infections of genitalia
 - Low back ache
- **Endometriosis**
- **Tumours of the genital tract**
 - Proliferative lesions and benign tumours; Adenomyosis, uterine leiomyoma, cervical polyp, ovarian cyst and tumours
 - Malignant tumours – vulvar, vaginal, cervical, ovarian, endometrial and trophoblastic carcinomas
 - Radiotherapy
 - Chemotherapy
- **Uterine displacements**
 - Uterovaginal prolapse
 - Retroverted uterus

- Anteverted uterus
- **Infertility**
 - Primary and secondary infertility
- **Gynaecological emergencies**
 - Acute salpingo-oophoritis
 - Twisted ovarian cyst, pedunculated fibroma of the uterus
 - Ectopic pregnancy
- **Special diagnostic tests**
 - Pap smear
 - Ovulation tests, semen analysis
 - Tubal patency tests – salpingography,
 - Hysterosalpingography
 - Culdoscopy, colposcopy, Laparoscopy
 - Biopsy –cervical and endometrial
 - Gynaecological operations and instruments
 - Vesicovaginal fistula
 - Ureterovaginal fistula

- Pre and post operative care of patients undergoing gynaecological operations
- **Hormone Therapy:** indications and management of complications

Research Experience:

All residents in the categorical program are required to complete an academic outcomes-based research project during their training. This project can consist of original bench top laboratory research, clinical research or a combination of both. The research work shall be compiled in the form of a thesis which is to be submitted for evaluation by each resident before end of the training. The designated Faculty will organize and mentor the residents through the process, as well as journal clubs to teach critical appraisal of the literature.

REGULATIONS

Scheme of the Course

A summary of four years course in MS Obstetrics and Gynaecology is presented as under:

Course Structure	Components	Examination
<p>At the end of First Year</p>	<p>1st Year of the Programme</p> <p>Principals of General Surgery :</p> <p>6 months in Obst & Gyne 6 months General Surgery</p> <p>Basic Science Education (Anatomy, Physiology, Pharmacology and Pathology)</p>	<p>Abridged Examination at the end of 1st year of MS Obstetrics and Gynaecology programme.</p> <ul style="list-style-type: none"> • Written: <p>MCQs based</p> <p>Video Projected Clinical Examination</p>
<p>At the End of Final Year</p>	<p><u>Clinical component of Final Examination</u></p> <ul style="list-style-type: none"> • Professional Education in Obstetrics and Gynaecology : <p>Training in Obstetrics and Gynaecology during 2nd, 3rd & 4th year of MS Obstetrics and Gynaecology programme</p> <p>Rotations in relevant fields</p> <p style="text-align: center;"><u>Research component</u></p> <p>Research work/Thesis writing project must be completed and thesis be submitted before the end of training.</p>	<p>Final Examination in specialized components of Obstetrics and Gynaecology at the end of 4th year of MS Obstetrics and Gynaecology programme.</p> <ul style="list-style-type: none"> • Written: Papers 1 & 2: Problem-based questions in the subject • Clinical, TOACS/OSCE & ORAL <ul style="list-style-type: none"> • TOACS/OSCE & ORAL • Clinical Examination (Long case, Short cases) • • CIS <p>Thesis examination with defense at the end of fourth (4th) year of MS Obstetrics and Gynaecology programme.</p>

Abridged Examinations

All candidates admitted in M.S. Obstetrics and Gynaecology Programme shall appear in Abridged Examination at the end of 1st calendar year of the programme.

Eligibility Criteria

To appear in Abridged Examination, a candidate shall be required

- a) To have submitted certificate of completion of mandatory workshops.
- b) To have submitted certificate of completion of one year of training from the supervisor/ supervisors of rotations.
- c) To have submitted assessment proforma from the supervisor on 03 monthly basis achieving a cumulative score of **75%**.
- d) To have submitted certificate of submission of synopsis
- e) To have submitted evidence of payment of examination fee.

Abridged Examination Schedule and Fee

- I. Abridged Examination at completion of one year of training, will be held twice a year.
- II. There will be a minimum period of 30 days between submission of applications for the examination and the conduction of examination.
- III. Examination fee will be determined periodically by the university.
- IV. The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.
- V. The Controller of Examination will issue Roll Number Slips on receipt of

prescribed application form, documents satisfying eligibility criteria and evidence of payment of examination fee.

Components of Abridged Examination

All candidates admitted in MS Obstetrics and Gynaecology course shall appear in Abridged examination at the end of 1st calendar year.

Abridged Examination at the end of 1st calendar

Written Examination	=300 Marks
Video projected clinical Examination	= 50 Marks
Total	= 350 marks

Written Paper: 150 MCQs single best answer with 2 marks for each MCQ

Principles of General surgery	= 100 MCQs
Basic Sciences	= 50 MCQs
Anatomy	= 15 MCQs
Physiology	= 10 MCQs
Pharmacology	= 10 MCQs
Pathology	= 15 MCQs

Video Projected Clinical Part of Abridged Exam (VPCE)

The VPCE will consist of 25 videos/ Slides of clinical material and scenarios from Obstetrics and Gynaecology, General Surgery. Each Video/ slide will have one question and carry 2 marks. Incorrect response will result in deduction of 0.5 marks. The Candidate securing 50% marks in VPCE will pass this part of exam

Declaration of Result

The Candidate will have to score 50% marks in written and video-projected clinical components and a cumulative score of 60% to be declared successful in the Abridged Examination. Cumulative score of 60% marks to be calculated by adding up secured marks of each component of the examination and then calculating its percentage.

Final Examination of Obstetrics and Gynaecology

All candidates admitted in M.S. Obstetrics and Gynaecology Programme shall appear in the Final Examination at end of structured training programme (end of 4th year).

Eligibility Criteria:

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

- i) To have submitted the result of passing Intermediate Examination.
- ii) To have submitted the certificate of completion of training, issued by the Supervisor will be mandatory.
- iii) To have achieved a cumulative score of 75% in Continuous Internal assessments of all training years.
- iv) To have got the thesis accepted and will then be eligible to appear in Final Examination.
- v) To have submitted no dues certificate from all relevant departments including library, hostel, cashier etc.
- vi) To have submitted evidence of submission of examination fee.

Final Examination Schedule and Fee

- a) Final examination will be held twice a year.
- b) The candidates have to satisfy eligibility criteria before permission is granted to take the examination.

- c) Examination fee will be determined and varied at periodic intervals 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 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.

M.S. Obstetrics & Gynaecology
Components of Final Examination

All candidates admitted in MS Obstetrics and Gynaecology course shall appear in Final examination at the end of structured training programme (end of 4th calendar year), and having passed the Abridged examination.

Written Part	= 500 Marks
Clinical, TOACS/OSCE & ORAL	= 500 Marks
Contribution Internal Assessment	= 100 Marks
Thesis Examination	= 400 Marks

Written Part of Final Examination

	MCQs	SEQs
Paper I	= 200 Marks	50 Marks
Paper II	= 200 Marks	50 Marks
Total	= 500 Marks	

Clinical, TOACS/OSCE & ORAL

Short Case	=	200 Marks
Long Case	=	100 Marks
TOACS/OSCE & ORAL	=	200 Marks
Total	=	500 Marks

Declaration of Result

For the declaration of result

- I. The candidate must get his/her Thesis accepted.
- II. The candidate must have passed the final written examination with 50% marks and the clinical & oral examination securing 50% marks. The cumulative passing score from the written and clinical/ oral examination shall be 60%. Cumulative score of 60% marks to be calculated by adding up secured marks of each component of the Examination i.e written and clinical/ oral and then calculating its percentage.
- III. The MS degree shall be awarded after acceptance of thesis and success in the final examination.
- IV. On completion of stipulated training period, irrespective of the result (pass or fail) the training slot of the candidate shall be declared vacant.

Submission / Evaluation of Synopsis

1. The candidates shall prepare their synopsis as per guidelines provided by the Advanced Studies & Research Board, available on university website.
2. 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.

3. 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 of Thesis

1. Thesis shall be submitted by the candidate duly recommended by the Supervisor.
2. The minimum duration between approval of synopsis and submission of thesis shall be one year, but the thesis can not be submitted later than 8 years of enrolment.
3. The research thesis must be compiled and bound in accordance with the Thesis Format Guidelines approved by the University and available on website.
4. The research thesis will be submitted along with the fee prescribed by the University.

Thesis Examination

- a) The candidate will submit his/her thesis at least 06 months prior to completion of training.
- b) The Thesis along with a certificate of approval from the supervisory will be submitted to the Registrar's office, who would record the date /

time etc. and get received from the Controller of Examinations within 05 working days of receiving.

- c) The Controller of Examinations will submit a panel of eight examiners within 07 days for selection of four examiners by the Vice Chancellor. The Vice Chancellor shall return the final panel within 05 working days to the Controller of Examinations for processing and assessment. In case of any delay the Controller of Examinations would bring the case personally to the Vice Chancellor.
- d) The Supervisor shall not act as an examiner of the candidate and will not take part in evaluation of thesis.
- e) The Controller of Examinations will make sure that the Thesis is submitted to examiners in appropriate fashion and a reminder is sent after every ten days.
- f) The thesis will be evaluated by the examiners within a period of 06 weeks.
- g) In case the examiners fail to complete the task within 06 weeks with 02 fortnightly reminders by the Controller of Examinations, the Controller of Examinations will bring it to the notice of Vice Chancellor in person.
- h) In case of difficulty in find an internal examiner for thesis evaluation, the Vice Chancellor would, in consultation with the concerned Deans, appoint any relevant person as examiner in supersession of the relevant Clause of the University Regulations.
- i) There will be two internal and two external examiners. In case of difficulty in finding examiners, the Vice Chancellor would, in consultation with the concerned Deans, appoint minimum of three, one internal and two external examiners.

- j) The total marks of thesis evaluation will be 400 and 60% marks will be required to pass the evaluation.
- k) The thesis will be considered / accepted, if the cumulative score of all the examiners is 60%.
- l) The clinical training will end at completion of stipulated training period but the candidate will become eligible to appear in the Final

Examination at completion of clinical training and after acceptance of thesis. In case clinical training ends earlier, the slot will fall vacant after stipulated training period.

Award of MS Obstetrics and Gynaecology Degree

After successful completion of the structured courses of MS Obstetrics and Gynaecology and qualifying Abridged & Final Examinations, (Written, Clinical, TOACS/OSCE & ORAL) the degree with title MS Obstetrics and Gynaecology shall be awarded.

CONTENT OUTLINE

MS Obstetrics and Gynaecology

Basic Sciences:

Student is expected to acquire comprehensive knowledge of Anatomy, Physiology, Pathology and Pharmacology relevant to surgical practice appropriate for Obstetrics and Gynaecology

1. Anatomy

- *Clinical and functional anatomy with pathological and operative relevance*
- *Surgical approaches to the abdomino-pelvic and perineal structures*
- *Histology and embryology of male and female genital tract*

- Cell Biology: Cytoplasm – Cytoplasmic matrix, cell membrane, cell organelles, cytoskeleton, cell inclusions, cilia and flagella.
- Nucleus – nuclear envelope, nuclear matrix, DNA and other components of chromatin, protein synthesis, nucleolus, nuclear changes indicating cell death.
- Cell cycle, mitosis, meiosis, cell renewal.
- Cellular differentiation and proliferation.
- Tissues of Body: Light and electron microscopic details and structural basis of function, regeneration and degeneration. Confocal microscopy.
- The systems/organs of body – Cellular organization, light and electron microscopic features, structure function correlations, and cellular organization.

Embryology

- General Features of Human Development
- Features of mitotic and meiotic modes of cell division. Genetic consequences of meiotic division.
- Abnormal mitotic and meiotic divisions of clinical importance.
- Gametogenesis: origin of germ cells.
- Oogenesis: prenatal and postnatal development of ova.
- Spermatogenesis: proliferation and maturation of male germ cells. Abnormal gametes, their clinical significance.
- Ovulation, fertilization and the consequences of fertilization.
- Segmentation of the fertilized ovum
- Formation of embryo
- Fetal membranes and the placenta
- Implantation of the ovum
- Trophoblast
- Chorion
- Placenta

Early Embryonic Development:

- Cleavage, morula and blastocyst formation and implantation.
- Formation of the three primary germ layers.
- Derivatives of the respective germ layers.

Extraembryonic Membranes:

- Development, functions and anomalies of yolk sac, amnion, chorion, allantois, umbilical cord and placenta.

Development of the External Body Form:

- Shaping of the abdomen and pelvic structures
- Development of the urogenital organs
- Development of the kidney & ureter
- Development of the uterus
- Development of genital glands
- Development of external genitalia.
- Development of breast and lactating ducts
- Common developmental anomalies associated

Teratogenesis:

- Factors known to be involved in the development of congenital anomalies especially related to the Gynaecological and Obstetric system.
- Concept of critical periods.

Period of the Growing Fetus:

- Various stages and salient features of the fetus development

Histology

Structural and Functional Organization of the Tissues of Body

- Classification of tissues and identification of various tissues particularly those related to the reproductive system, in routine histological preparations under the light microscope.

The Epithelial Tissue

- General structure, functions and classification of epithelia
- Their location in the body
- General characters of serous and mucous membranes
- The Connective Tissue
- Key histological features of normal genitourinary and reproductive organs of male and female (including breast)

Surface and Imaging Anatomy

- The abdomen, peritoneum
 - Stomach
 - Small intestine
 - Large intestine
 - Rectum
 - Anal canal
 - Pancreas

- Liver
- Gall bladder
- Urogenital system
 - The kidneys
 - The ureters
 - The urinary bladder
 - The female urethra
 - The female genital organs
 - Ovaries
 - Fallopian tubes
 - Uterus
 - Cervix
 - Ligaments of the uterus
- Ext. genital organs of female
 - Vulva
 - Vagina
 - Breasts
- Female pelvis
- Pelvic floor
- Detailed blood supply and nerve supply of pelvis
- Lymphatic drainage of the abdomen & pelvis
- Lymphatic drainage of the lower limb
- Related endocrine structures
 - Hypothalamus
 - Pituitary gland
 - Thyroid and parathyroid gland
 - Thymus and spleen
 - Adrenals

2. Physiology

- Physiology of puberty, adolescence, menstruation, & menopause
 - Physiology of menstruation and ovulation
 - Physiology of spermatogenesis
 - Physiological development and changes in breast
- Physiological adaptations during pregnancy & labor
 - Normal pregnancy, labour & puerperium

- Endocrinology related to male and female reproduction
 - Endocrinology of pregnancy
 - Physiology & endocrinology of Placenta & Lactation
 - Physiology & endocrinology of breast
 - Immunology of pregnancy
- Reproductive Endocrinology of Female
 - Polycystic ovarian syndrome
 - Hirsutism /virilization
 - Female infertility
 - Premature ovarian failure
 - Menstrual disorders
 - Dysfunctional uterine bleeding
 - Menopause
 - Contraception and hormone replacement therapy
 - Ovarian tumors
- Reproductive Endocrinology of Male
 - Testicular physiology
 - Male hypogonadism
 - Male infertility
 - Gynaecomastia
 - Erectile dysfunction
 - Testicular tumors
 - Autoimmune Polyglandular Failure Syndrome
 - Androgen replacement therapy
- Endocrinology - hypothalamus pituitary, thyroid and adrenal glands and neurotransmitters
- Cardiovascular system
 - The heart and circulation
 - Regulation of blood vessels
 - Cardiac output
- Blood
 - RBC
 - Blood groups
 - WBC
 - Blood clotting
 - Plasma
- Respiration

- Lung volumes
- Respiratory gases
- Emergency resuscitation
- Carriage of gases.
- Blood gas tensions
- Regulation of respiration.
- Digestion
 - Control of digestive secretions
 - Metabolic Pathways
 - Nutritional requirements
 - Fluid & electrolyte balance
- Kidney
 - Urine formation
 - Filtration & reabsorption of water
 - Renal failure
- Skin & body temperature.

3. Pharmacology

- British Pharmacopia
- Receptors
- Mechanisms of Drug Action
- Pharmacokinetics
- Pharmacokinetic Process
 - Absorption
 - Distribution
 - Metabolism
 - Desired Plasma Concentration
 - Volume of Distribution
 - Elimination
 - Elimination rate constant and half life
 - Creatinine Clearance
- Drug Effect
 - Beneficial Responses
 - Harmful Responses
 - Allergic Responses
- Drug Dependence, Addiction, Abuse and Tolerance
- Drug Interactions

- Drug use in pregnancy and lactation
- Pharmacology of identified drugs used during pregnancy, labour, post partum period in reference to their absorption, distribution, excretion, (hepatic) metabolism, transfer of the drugs across the placenta, effect of the drugs (used) on labour, on fetus, their excretion through breast milk.
- Mechanism of action, excretion, metabolism of identified drugs used in Obstetrics & Gynaecology.
- Role of hormones in Obstetrics & Gynaecology.
- Drugs affecting the autonomic nervous system
 - Cholinergic agonists
 - Cholinergic antagonists
 - Adrenergic agonists
 - Adrenergic antagonists
- Drugs affecting the CNS
 - Anxiolytic and hypnotic Drugs
 - CNS stimulants
 - Antidepressants drugs
 - Neuroleptic Drugs
 - Opioid analgesics and antagonists
- Drugs affecting CVS
 - Treatment of congestive heart failure.
 - Antiarrhythmic drugs
 - Antihypertensives
- Drug affecting blood
 - Drugs to treat bleeding
 - Drugs to treat anemia
 - Anti coagulants
 - Thrombolytic drugs
- Diuretic drugs
- GI drugs (drugs used to treat peptic ulcer and constipation)
- Hormones of the pituitary and thyroid
- Insulin and oral hypoglycemic drugs
- Steroid hormones
 - Estrogens
 - Progestogens
 - Oral contraceptive pills
 - Androgens

- Adrenal corticosteroid
- Ergot alkaloids
- Related to Obstetrics and Gynaecology;
 - Antiinflammatory drugs
 - Antibiotics
 - Antifungal drugs
 - Antiviral drugs
 - Anticancer drugs
 - Urinary tract antiseptics

4. Pathology

Pathological alterations at cellular and structural level in infection, inflammation, ischaemia, neoplasia and trauma affecting the gynaecological and obstetric management

Cell Injury and adaptation

- Reversible and Irreversible Injury
- Fatty change, Pathologic calcification
- Necrosis and Gangrene
- Cellular adaptation
- Atrophy, Hypertrophy,
- Hyperplasia, Metaplasia, Aplasia

Inflammation

- Acute inflammation
- Cellular components and chemical mediators of acute inflammation
- Exudates and transudate
- Sequelae of acute inflammation
- Chronic inflammation
- Etiological factors and pathogenesis
- Distinction between acute and chronic (duration) inflammation
- Histologic hallmarks
- Types and causes of chronic inflammation, non-granulomatous & granulomatous,

Haemodynamic disorders

- Etiology, pathogenesis, classification and morphological and clinical manifestations of Edema, Haemorrhage, Thrombosis, Embolism,

Infarction & Hyperaemia

- Shock; classification etiology, and pathogenesis, manifestations.
- Compensatory mechanisms involved in shock
- Pathogenesis and possible consequences of thrombosis
- Difference between arterial and venous emboli

Neoplasia

- Dysplasia and Neoplasia
- Benign and malignant neoplasms
- Etiological factors for neoplasia
- Different modes of metastasis
- Tumor staging system and tumor grade

Immunity and Hypersensitivity

- Immunity
- Immune response
- Diagnostic procedures in a clinical Immunology laboratory
- Protective immunity to microbial diseases
- Tumour immunology
- Immunological tolerance, autoimmunity and autoimmune diseases.
- Transplantation immunology
- Hypersensitivity
- Immunodeficiency disorders
- Immunoprophylaxis & Immunotherapy

Microbiology

- Role of microbes in various Gynaecological and Obstetric disorders
- Normal and abnormal microbiology of genital tract - bacterial, viral & parasitical infections responsible for maternal, fetal and gynaecological disorders
- Infection source
- Nosocomial infections
- Bacterial growth and death
- Pathogenic bacteria
- Vegetative organisms
- Spores
- Important viruses
- Important parasites
- Surgically important microorganisms
- Sources of infection
- Asepsis and antisepsis

- Sterilization and disinfection
- Infection prevention
- Immunization
- Personnel protection from communicable diseases
- Use of investigation and procedures in laboratory
- Basics in allergy and immunology

Special Pathology

- Pathophysiology of ovaries, fallopian tubes, uterus, cervix, vagina and external genitalia in healthy and diseased conditions.
- Pathology of placenta, umbilical cord, amniotic fluid and fetus.
- Humoral and cellular immunology in Obstetrics & Gynaecology
- Menstrual disorders and their etio-pathogenesis
- Inflammatory and infective lesions of the genitourinary system in male and female.
- Classification and sub-classification of benign and malignant genitourinary tumors.
- Endometriosis and adenomyosis, cervical carcinomas and CIN, endometrial carcinoma, its clinical presentation and morphology, leiomyomas and their clinical effects
- Gestational trophoblastic disease with special emphasis on hydatidiform mole and choriocarcinoma.
- Markers in Obstetric & Gynaecology – non neoplastic and neoplastic diseases
- Inflammatory lesions of the breast
- Benign and malignant breast tumors
- Gynaecomastia
- Pathologic findings of thyroiditis, adrenocortical adenoma, pheochromocytoma, diabetes mellitus, and pituitary malfunction in the gynaecological and obstetric disorders
- Disturbances of endocrine function
- Pathology and clinical symptoms of acute and chronic pyelonephritis.
- Calcium metabolism
- Temperature regulation
- Fluid & electrolyte imbalance
- Blood grouping & blood transfusion
- Indications for and interpretation of results of common biochemical and haematological tests

MS Obstetrics and Gynaecology

Principles of General Surgery

- History of surgery
- Preparing a patient for surgery
- Principles of operative surgery: asepsis, sterilization and antiseptics
- Surgical infections and antibiotics
- Basic principles of anaesthesia and pain management
- Acute life support and critical care:
 - Pathophysiology and management of shock
 - Fluids and electrolyte balance/ acid base metabolism
 - Haemostasis, blood transfusion
- Trauma: assessment of polytrauma, triage, basic and advanced trauma
- Accident and emergency surgery
- Wound healing and wound management
- Nutrition and metabolism
- Principles of burn management
- Principles of surgical oncology
- Principles of laparoscopy and endoscopy
- Organ transplantation
- Informed consent and medicolegal issues
- Molecular biology and genetics
- Operative procedures for common surgical manifestations e.g cysts, sinuses, fistula, abscess, nodules, basic plastic and reconstructive surgery

Common Surgical Skills

Incision of skin and subcutaneous tissue :

- Langer's lines
- Healing mechanism
- Choice of instrument
- Safe practice

Closure of skin and subcutaneous tissue:

- Options for closure
- Suture and needle choice
- Safe practice

Knot tying:

- Choice of material
- Single handed
- Double handed
- Superficial
- Deep

Tissue retraction:

- Choice of instruments
- Placement of wound retractors
- Tissue forceps

Use of drains:

- Indications
- Types
- Insertion
- Fixation
- Management/removal

Incision of skin and subcutaneous tissue:

- Ability to use scalpel, diathermy and scissors

Closure of skin and subcutaneous tissue:

- Accurate and tension free apposition of wound edges

Haemostasis:

- Control of bleeding vessel (superficial)
- Diathermy
- Suture ligation
- Tie ligation
- Clip application
- Plan investigations
- Clinical decision making
- Case work up and evaluation; risk management

Pre-operative assessment and management:

- Cardiorespiratory physiology
- Diabetes mellitus
- Renal failure
- Pathophysiology of blood loss

- Pathophysiology of sepsis
- Risk factors for surgery
- Principles of day surgery
- Management of comorbidity

Intraoperative care:

- Safety in theatre
- Sharps safety
- Diathermy, laser use
- Infection risks
- Radiation use and risks
- Tourniquets
- Principles of local, regional and general anaesthesia

Post-operative care:

- Monitoring of postoperative patient
- Postoperative analgesia
- Fluid and electrolyte management
- Detection of impending organ failure
- Initial management of organ failure
- Complications specific to particular operation
- Critical care

Blood products:

- Components of blood
- Alternatives to use of blood products
- Management of the complications of blood product transfusion including children

Antibiotics:

- Common pathogens in surgical patients
- Antibiotic sensitivities
- Antibiotic side-effects
- Principles of prophylaxis and treatment

Safely assess the multiply injured patient:

- History and examination
- Investigation
- Resuscitation and early management
- Referral to appropriate surgical subspecialties

Technical Skills

- Central venous line insertion
- Chest drain insertion
- Diagnostic peritoneal lavage
- Bleeding diathesis & corrective measures, e.g. warming, packing
- Clotting mechanism; Effect of surgery and trauma on coagulation
- Tests for thrombophilia and other disorders of coagulation
- Methods of investigation for suspected thromboembolic disease
- Anticoagulation, heparin and warfarin
- Role of V/Q scanning, CT angiography and thrombolysis
- Place of pulmonary embolectomy
- Awareness of symptoms and signs associated with pulmonary embolism and DVT
- Role of duplex scanning, venography and d-dimer measurement
- Initiate and monitor treatment

Diagnosis and Management of Common Surgical Conditions:

- Abdominal pain
- Vomiting
- Trauma
- Groin conditions
 - Hernia
 - Hydrocoele
 - Penile inflammatory conditions
 - Undescended testis
 - Acute scrotum
- Abdominal wall pathologies
- Urological conditions
- Constipation
- Head / neck swellings
- Intussusception
- Abscess

MS Obstetrics and Gynaecology **Component**

Students should be familiar with typical clinical presentation, key physical findings, radiological findings and differential diagnosis, initial treatment, and referral indications for common Gynaecological and Obstetric diseases.

OBSTETRICS:

- Basic sciences of Reproduction & Applied Anatomy of genitourinary system,
- abdomen, pelvis, pelvic floor, anterior abdominal wall, breast in obstetrics
- Reproductive Anatomy
- Gametogenesis fertilization, implantation & early development of human embryo
- Fetal growth & development
- Birth defects, Genetics & teratology & counseling
- Prenatal diagnosis and genetics
- Fetal medicine in clinical practice
- Physiological changes during pregnancy.
- Endocrinology of pregnancy.
- Pre-conception counseling
- Normal pregnancy, labour & puerperium.
- Antenatal care
- Breast feeding, baby friendly initiative
- Early recognition and prompt management of pregnancy complications
 - Hyperemesis gravid arum
 - Abortions
 - Ectopic pregnancy
 - Hydatidiform mole
 - Pre-eclampsia
 - Eclampsia
 - Antepartum hemorrhage
 - Spontaneous miscarriage
 - Recurrent miscarriage

- Multiple pregnancy
- Post partum haemorrhage
- Preterm labour
- Premature rupture of membranes
- Polyhydramnios
- Oligohydramnios
- Prolonged labour
- Ectopic pregnancy
- Trophoblast disease
- Management of pregnancies complicated by medical, surgical or gynaecological diseases, in consultation with the concerned specialties by team approach.
 - Anemia
 - Heart disease
 - Diabetes mellitus
 - Liver disorders
 - Respiratory diseases
 - Renal diseases
 - Haematological problems in pregnancy.
 - Neurological conditions
 - Rheumatology
 - Dermatoses of pregnancy
 - Psychiatric disorders
 - Hypertensive disorders
 - Acute abdomen
 - Acute appendicitis
 - Intestinal obstruction,
 - Fibroids
 - Ovarian tumors
 - Carcinoma cervix
 - Genital prolapse.
- Infections in pregnancy.
 - Malaria
 - Toxoplasmosis
 - Viral infections(Rubella, CMV, Hepatitis B, Herpes)
 - Syphilis and other sexually transmitted infections including HIV.
 - Parents to child transmission of HIV infection
- Evaluation of the fetal and maternal health in complicated pregnancy by

- making use of available diagnostic modalities and plan for safe delivery of the fetus and safeguarding the maternal health
- Prenatal diagnosis of fetal abnormalities
- Partographic monitoring of labour progress
- Early recognition of dysfunctional labour and appropriate interventions during labour including active management of labour.
- Obstetrical analgesia and anesthesia.
- Induction and augmentation of labour.
- Management of abnormal labour
 - Abnormal pelvis and soft tissue abnormality in maternal passage
 - Malpresentation and Malpositions of fetus
 - Abnormal uterine action
 - Obstructed labour
 - Cervical dystocia.
 - Third stage complications
 - PPH including surgical management
 - Retained placenta
 - Uterine inversion
- Post partum collapse
 - Amniotic fluid embolism
 - Abnormal puerperium
 - Puerperal sepsis
 - Thrombophlebitis
 - Mastitis
 - Puerperal venous sinus thrombosis
 - Psychosis.
- National Health Programmes to improve the maternal and child health, social obstetrics and vital statistics.
- Drugs used in obstetric practice including prostaglandins.
- Coagulation disorders in obstetrics, Blood and component therapy
- Operative obstetrics - decision making, technique, recognition and management of complications – caesarian section, instrumental delivery, obstetrics hysterectomy, history of destructive surgery. Manipulations - version, MRP etc.
- Intensive care in obstetrics for critically ill patient. Fluid and electrolyte balance, volume status maintenance, protecting vital organ function.
- Termination of pregnancy
- Provision of safe abortion services, selection of case, techniques, and

management of complications

Obstetric Statistics

- Live birth
- Still birth
- Maternal mortality rate
- Perinatal mortality rate
- Infant and neonatal mortality rate
- Factors that may reduce maternal and perinatal mortality

NEONATOLOGY:

- Care of newborn
- Care of preterm
- Infants of diabetic mother
- Asphyxia & neonatal resuscitation.
- Neonatal sepsis - prevention, early detection & management
- Neonatal hyperbilirubinemia, investigation and management
- Birth trauma - prevention, early detection & management
- Detection of congenital malformations in new born and referrals for surgical corrections
- Management of the common problems in neonatal period

GYNAECOLOGY:

- Diagnosis and surgical management of clinical conditions related to congenital malformations of genital tract
- Chromosomal abnormalities and intersex
- Gynecological disorders of childhood and adolescence
- Polycystic ovary syndrome and secondary amenorrhoea
- Physiology of menstruation, common menstrual disorders and their management; medical & surgical
- Menorrhagia and primary dysmenorrhoea
- Premenstrual syndrome
- Reproductive Endocrinology: Evaluation of primary and secondary amenorrhea, management of hyperprolactinemia, hirsutism, chronic anovulation and polycystic ovary disease (PCODP).
- Endometriosis and adenomyosis - medical and surgical management.

- Infertility evaluation and management
- Use of ovulation induction methods
- Assisted reproduction
- Tubal microsurgery
- Reproductive tract infections
- Sexually transmitted Infections
- HIV/AIDS: prevention, diagnosis and management
- Genital Tuberculosis
- Benign and malignant tumors of genital tract - Early diagnosis and management
- Principles and practice of oncology in gynaecology - chemotherapy, radiotherapy, palliative treatment
- Malignant disease of the vulva and vagina
- Benign diseases of the vagina, cervix and ovary
- Premalignant and malignant disease of the cervix
- Epithelial ovarian cancer
- Benign disease of the uterus
- Cancer of uterine corpus
- Supports of pelvic organs, genital prolapse, surgical management of genital prolapse.
- Common urological problems in gynaecology - Utero-vaginal prolapse, urinary incontinence, voiding difficulties, vesicovaginal fistula.
- Management of menopause, prevention of complications
- Hormone replacement therapy (HRT)
- Cancer screening - genital, breast
- Recent advances
- Newer diagnostic aids - USG, and other imaging techniques, endoscopies
- Hysteroscopy, laparoscopy - diagnostic, simple surgical procedures, including laparoscopic tubal occlusion, colposcopy.
- Medico legal aspects, ethics, communications and counseling.
- Operative gynaecology - Selection of case technique and management of complications of minor and major gynaecology procedures.
- Abdominal and vaginal hysterectomy
- Surgical procedures for genital prolapse
- Surgical management of benign and malignant genital neoplasms.
- Sexual dysfunction
- Ethical issues in Obst. & Gynae.
- Domestic violence and sexual assault

FAMILY PLANNING:

- Demography and population dynamics.
- Contraception - temporary methods, permanent methods
- Legal issues
- Emergency contraception.
- Recent advances in contraceptive technology.

Common Gynaecological and Obstetric Skills and Procedures

- On completion of the initial training in Part I, the trainees will be competent in all aspects of the basic, operative and non operative care of surgical patients
- During Part II training, they will understand the importance of Gynaecological and Obstetric care and management with particular reference to common Gynaecological and Obstetric presentations recognizing and preventing secondary disorders. They will be capable of resuscitating, assessing and initiating the surgical management of patients deteriorating as a result of local and systemic complications. They will demonstrate sound judgment when seeking more senior support, prioritizing medical interventions and escalating the level of medical care.

General surgical care:

- Administration of antibiotics in the surgical patient
- Use of blood and its products
- The role/complications of diathermy
- Pain relief in surgery
- Thrombo-embolic prevention and management
- Prevention and management
- Wound care and nosocomial infection
- Suture techniques and materials
- Initial assessment and management of obstetric and gynaecological problems

Obstetrics

- Elective caesarean section

- Emergency caesarean section
- Repair torn bladder
- Repair third degree tear
- Repair lacerated cervix
- Application and removal of cervical suture
- Elective breech delivery
- Twin delivery (including principles of internal version)
- Operative vaginal delivery
- Manual rotation
- Mid-cavity non-rotation forceps
- Ventouse rotation
- Obstetric ultrasound for dating, placental localization, viability and multiple pregnancy.

Gynaecology

- Pelvic laparotomy
- Hysterosalpingography (HSG)
- Dilatation and curettage
- Hysterectomy; Abdominal & vaginal
- Myomectomy
- Sling's operation for prolapse
- Anterior and posterior repair
- Management of corpus luteum cyst
- Management of ruptured/torsion ovarian cyst
- Ligation of tubes
- Treatment of non-CIN cervical lesions
- Pap smear
- Cervical Biopsy
- Marsupialization of Bartholin cyst/abscess
- Insertion and retrieval of lost intrauterine IUCD
- Ring Pessary
- Mini Lap

Optional additional training

- Training in laparoscopy to assist in diagnosis of acute pelvic pain, to offer female sterilization and to perform tubal studies for investigation of infertility

- Basic training in colposcopic techniques might also be offered to trainees caring for women in remote areas without reasonable access to specialist care.

Thesis Component (Fourth year of MS Obstetrics and Gynaecology Programme)

RESEARCH/ THESIS WRITING

Total of one year will be allocated for work on a research project with thesis writing. Project must be completed and thesis be submitted before the end of training. Research can be done as one block in 5th year of training or it can be stretched over five years of training in the form of regular periodic rotations during the course as long as total research time is equivalent to one calendar year.

Research Experience

The active research component program must ensure meaningful, supervised research experience with appropriate protected time for each resident while maintaining the essential clinical experience. Recent productivity by the program faculty and by the residents will be required, including publications in peer-reviewed journals. Residents must learn the design and interpretation of research studies, responsible use of informed consent, and research methodology and interpretation of data. The program must provide instruction in the critical assessment of new therapies and of the surgical literature. Residents should be advised and supervised by qualified staff members in the conduct of research.

Clinical Research

Each resident will participate in at least one clinical research study to become familiar with:

1. Research design
2. Research involving human subjects including informed consent and operations of the Institutional Review Board and ethics of human experimentation
3. Data collection and data analysis
4. Research ethics and honesty
5. Peer review process

This usually is done during the consultation and outpatient clinic rotations.

Case Studies or Literature Reviews

Each resident will write, and submit for publication in a peer-reviewed journal, a case study or literature review on a topic of his/her choice.

Laboratory Research

Bench Research

Participation in laboratory research is at the option of the resident and may be arranged through any faculty member of the Division. When appropriate, the research may be done at other institutions.

Research involving animals

Each resident participating in research involving animals is required to:

1. Become familiar with the pertinent Rules and Regulations of the University of Health Sciences Lahore i.e. those relating to "Health and Medical Surveillance Program for Laboratory Animal Care Personnel" and "Care and Use of Vertebrate Animals as Subjects in Research and Teaching"
2. Read the "Guide for the Care and Use of Laboratory Animals"
3. View the videotape of the symposium on Humane Animal Care

Research involving Radioactivity

Each resident participating in research involving radioactive materials is required to

1. Attend a Radiation Review session
2. Work with an Authorized User and receive appropriate instruction from him/her.

METHODS OF INSTRUCTION/COURSE CONDUCTION

As a policy, active participation of students at all levels will be encouraged. Following teaching modalities will be employed:

1. Lectures
2. Seminar Presentation and Journal Club Presentations
3. Group Discussions
4. Grand Rounds
5. Clinico-pathological Conferences
6. SEQ as assignments on the content areas
7. Skill teaching in ICU, Operation theatres, emergency and ward settings
8. Attend genetic clinics and rounds for at least one month.
9. Self study, assignments and use of internet
10. Bedside teaching rounds in ward
11. OPD & Follow up clinics
12. Long and short case presentations

In addition to the conventional teaching methodologies interactive strategies like conferences will also be introduced to improve both communication and clinical skills in the upcoming consultants. Conferences must be conducted regularly as scheduled and attended by all available faculty and residents. Residents must actively request autopsies and participate in formal review of gross and microscopic pathological material from patients who have been under their care. It is essential that residents participate in planning and in conducting conferences.

1. Clinical Case Conference

Each resident will be responsible for at least one clinical case conference each month. The cases discussed may be those seen on either the consultation or clinic service or during rotations in specialty areas. The resident, with the advice of the Attending Surgeon on the Consultation Service, will prepare and present the case(s) and review the relevant literature.

2. Monthly Student Meetings

Each affiliated medical college approved to conduct training for MS Obstetrics and Gynaecology will provide a room for student meetings/discussions such as:

- a.** Journal Club Meeting
- b.** Core Curriculum Meetings
- c.** Skill Development

a. Journal Club Meeting

A resident will be assigned to present, in depth, a research article or topic of his/her choice of actual or potential broad interest and/or application. Two hours per month should be allocated to discussion of any current articles or topics introduced by any participant. Faculty or outside researchers will be invited to present outlines or results of current research activities. The article should be critically evaluated and its applicable results should be highlighted, which can be incorporated in clinical practice. Record of all such articles should be maintained in the relevant department.

b. Core Curriculum Meetings

All the core topics of Obstetrics and Gynaecology should be thoroughly discussed during these sessions. The duration of each session should be at least two hours once a month. It should be chaired by the chief resident (elected by the residents of the relevant discipline). Each resident should be given an opportunity to brainstorm all topics included in the course and to generate new ideas regarding the improvement of the course structure

c. Skill Development

Two hours twice a month should be assigned for learning and practicing clinical skills.

List of skills to be learnt during these sessions is as follows:

1. Residents must develop a comprehensive understanding of the indications, contraindications, limitations, complications, techniques, and interpretation of results of those technical procedures integral to the discipline
2. Residents must acquire knowledge of and skill in educating patients about the technique, rationale and ramifications of procedures and in obtaining procedure-specific informed consent. Faculty supervision of residents in their performance is required, and each resident's experience in such procedures must be documented by the program director.
3. Residents must have instruction in the evaluation of medical literature, clinical epidemiology, clinical study design, relative and absolute risks of disease, medical statistics and medical decision-making.
4. Training must include cultural, social, family, behavioral and economic issues, including confidentiality of information, indications for life support systems, and allocation of limited resources.
5. Residents must be taught the social and economic impact of their decisions on patients, the primary care physician and society. This can be achieved by attending the bioethics lectures
6. Residents should have instruction and experience with patient counseling skills and community education.
7. This training should emphasize effective communication techniques for diverse populations, as well as organizational resources useful for patient and community education.
8. Residents should have experience in the performance of Obstetrics and Gynaecology related clinical laboratory and radionuclide studies and basic laboratory techniques, including quality control, quality assurance and proficiency standards

9. Each resident will manage at least the following essential Gynaecological and Obstetric cases and observe and participate in each of the following procedures, preferably done on patients under supervision initially and then independently. (pg. 39-40)

3. Annual Grand Meeting

Once a year all residents enrolled for MS Obstetrics and Gynaecology should be invited to the annual meeting at UHS Lahore.

One full day will be allocated to this event. All the chief residents from affiliated institutes will present their annual reports. Issues and concerns related to their relevant courses will be discussed. Feedback should be collected and suggestions should be sought in order to involve residents in decision making.

The research work done by residents and their literary work may be displayed.

In the evening an informal gathering and dinner can be arranged. This will help in creating a sense of belonging and ownership among students and the faculty.

LOG BOOK

The residents must maintain a log book and get it signed regularly by the supervisor. A complete and duly certified log book should be part of the requirement to sit for MS examination. Log book should include adequate number of diagnostic and therapeutic procedures observed and performed, the indications for the procedure, any complications and the interpretation of the results, routine and emergency management of patients, case presentations in CPCs, journal club meetings and literature review.

Proposed Format of Log Book is as follows:

Candidate's Name: _____

Roll No. _____

The above mentioned procedures shall be entered in the log book as per format:

Procedures Performed

Sr.#	Date	Name of Patient, Age, Sex & Admission No.	Diagnosis	Procedure Performed	Supervisor's Signature
1					
2					
3					
4					

Emergencies Handled

Sr. #	Date	Name of Patient, Age, Sex & Admission No.	Diagnosis	Procedure/Management	Supervisor's Signature
1					
2					
3					
4					

Case Presented

Sr. #	Date	Name of Patient, Age, Sex & Admission No.	Case Presented	Supervisor's Signature
1				
2				
3				
4				

Seminar/Journal Club Presentation

Sr. #	Date	Topic	Supervisor's signature
1			
2			
3			
4			

Evaluation Record

(Excellent, Good, Adequate, Inadequate, Poor)

At the end of the rotation, each faculty member will provide an evaluation of the clinical performance of the fellow.

Sr.#	Date	Method of Evaluation (Oral, Practical, Theory)	Rating	Supervisor's Signature
1				
2				
3				
4				

EVALUATION & ASSESSMENT STRATEGIES

Assessment

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

Student-Centered Integrated Assessment

It views students as decision-makers in need of information about their own performance. Integrated Assessment is meant to give students responsibility for deciding what to evaluate, as well as how to evaluate it, encourages students to **'own'** the evaluation and to use it as a basis for self-improvement. Therefore, it tends to be growth-oriented, student-controlled, collaborative, dynamic, contextualized, informal, flexible and action-oriented.

In the proposed curriculum, it will be based on:

- Self Assessment by the student
- Peer Assessment
- Informal Internal Assessment by the Faculty

Self Assessment by the Student

Each student will be provided with a pre-designed self-assessment form to evaluate his/her level of comfort and competency in dealing with different relevant clinical situations. It will be the responsibility of the student to correctly identify his/her areas of weakness and to take appropriate measures to address those weaknesses.

Peer Assessment

The students will also be expected to evaluate their peers after the monthly small group meeting. These should be followed by a constructive feedback according to the prescribed guidelines and should be non-judgmental in nature. This will enable students to become good mentors in future.

Informal Internal Assessment by the Faculty

There will be no formal allocation of marks for the component of Internal Assessment so that students are willing to confront their weaknesses rather than hiding them from their instructors.

It will include:

- a. Punctuality
- b. Ward work
- c. Monthly assessment (written tests to indicate particular areas of weaknesses)
- d. Participation in interactive sessions

Formative Assessment

Will help to improve the existing instructional methods and the curriculum in use

Feedback to the faculty by the students:

After every three months students will be providing a written feedback regarding their course components and teaching methods. This will help to identify strengths and weaknesses of the relevant course, faculty members and to ascertain areas for further improvement.

Summative Assessment

It will be carried out at the end of the programme to empirically evaluate cognitive, psychomotor and affective domains in order to award diplomas for successful completion of courses.

Abridged Examinations

MS Obstetrics and Gynaecology

Total Marks; 350

All candidates admitted in MS Obstetrics and Gynaecology course shall appear in Abridged examination at the end of first calendar year.

Abridged Examination at the end of 1st calendar

Written Examination = 300 Marks

Video projected clinical Examination = 50 Marks

Total = 350 marks

Written Paper

150 MCQs Single best answer with 2 marks for each MCQ

Principles of General Surgery = 100 MCQs

Basic Sciences = 50 MCQs

Anatomy	= 15 MCQs
Physiology and Biochemistry	= 10 MCQs
Pharmacology	= 10 MCQs
Pathology	= 15 MCQs

Video Projected Clinical Part of Abridged Exam (VPCE)

The VPCE will consist of 25 videos/ Slides of clinical material and scenarios from Obstetrics and Gynaecology, General Surgery and Radiology. Each Video/ slide will have one question and carry 2 marks.

Final MS Examination Obstetrics and Gynaecology
Total Marks: 1500

All candidates admitted in MS Obstetrics and Gynaecology course shall appear in Final examination at the end of structured training programme (end of fourth calendar year) and after clearing Abridged Examination.

There shall be two written papers of 250 marks each, Clinical, TOACS/OSCE & ORAL of 500 marks, Internal Assessment of 100 marks and thesis examination of 400 marks.

Final MS Obstetrics and Gynaecology
Clinical Examination
Total Marks: 1000

Topics included in paper 1

Obstetrics & neonatology

Topics included in paper 2

Gynaecology & Family planning

Components of Final Clinical Examination

Theory

Paper I

5 SEQs (No Choice)

250 Marks

50 Marks

3 Hours

100 MCQs

200 Marks

Paper II

5 SEQs (No Choice)
100 MCQs

250 Marks

50 Marks
200 Marks

3 Hours

Only those candidates, who pass in theory papers, will be eligible to appear in the Clinical, TOACS/OSCE & ORAL.

Viva

80 Marks

Clinical, TOACS/OSCE & ORAL

Four short cases

200 Marks

One long case:

100 Marks

TOACS/OSCE & ORAL

200 Marks

Continuous Internal Assessment

100 Marks

MS Obstetrics and Gynaecology
Thesis Examination
Total Marks: 400

All candidates admitted in MS Obstetrics and Gynaecology courses shall appear in thesis examination at the end of 4th year of the MS programme and not later than 7th calendar year of enrolment. The examination shall include thesis evaluation with defense.

RECOMMENDED BOOKS

CORE TEXTBOOK

- Edmonds ***Dewhurst's Post Graduate Obstetrics & Gynecology*** 7th Ed. 2007
- D James, P Steer, C Weiner, B Gonik. ***High Risk Pregnancy – Management Options***. 3rd Ed. 2006.
- Berek ***Novak & Berek's Gynecology***. 14th Ed. 2007
- Chard & Lilford. ***Basic Sciences for Obstetrics & Gynecology***. 5th Ed. 1998
- De Swiet, Chamberlain, Bennet. ***Basic Science in Obstetrics and Gynecology*** 3rd Ed. 2002
- Rana M. H., Ali S., Mustafa M. ***A Handbook of Behavioural Sciences for Medical and Dental Students***. Lahore: University of Health Science; 2007

GYNECOLOGICAL SURGERY (for reference only)

- Monaghan, Tito, Naik. ***Bonney's Gynecological Surgery***. 10th Ed. 2004
- J. Apuzzio, A. Vintelioz, L. Iffy. ***Operative Obstetrics***. 3rd Ed. 2005

SUPPLEMENTARY BOOKS

- Snell. ***Clinical Anatomy***.
- Langman J. ***Embryology***.
- DTY Liu. ***Labor Ward Manual***. 4th Ed. 2007

- Studd. ***Progress in O & G***. Vol 17 (2006), Vol 16 (2005), Vol 15 (2003)
- Bonnar. ***Recent Advances in O & G***. Vol 23 (2005), Vol 22 (2003).
- ***RCOG Clinical Greentop Guidelines***

REVISION TEXTBOOKS

- Stirrat, Mills, Draycott. ***Notes on Obstetrics & Gynecology***. 5th Ed. 2003.
- Magowan B. ***Churchill's Pocketbook – Obstetrics & Gynecology***. 3rd Ed. 2005.
- Norwitz & Schorge. ***Obstetrics & Gynecology at a glance***. 2nd Ed. 2006.
- Chin, H. ***On call Obstetrics & Gynecology***. 3rd Ed. 2006

PRACTICE TEXTS FOR SEQ / MCQ / OSCE

- Chard MCQs on ***Basic Science for Obstetrics & Gynecology*** 1998
- Setchell & Lilford. ***MCQs in Gynecology & Obstetrics*** 3rd Ed. 1996
- J. Konje. ***Short Essays, MCQs, & OSCEs for MRCOG Part II, a comprehensive guide***.2003.
- P. Abedin, K Sharif. ***MRCOG II Short Essay Questions***. 2003.
- R. de Courcy-Wheeler. ***MCQ for MRCOG Part II***. 2003.
- D. Luesley. ***MCQ & Short Essays for MRCOG***. 2004.

APPENDIX "E"
(See Regulation 9-iii)

MANDATORY WORKSHOPS

1. Each candidate of MD/MS/MDS program would attend the 04 mandatory workshops and any other workshop as required by the university.
2. The four mandatory workshops will include the following
 - a. **Research Methodology and Biostatistics**
 - b. **Synopsis Writing**
 - c. **Communication Skills**
 - d. **Introduction to Computer / Information Technology and Software programs**

3 months
3. The workshops will be held on 03 monthly basis.
4. An appropriate fee for each workshop will be charged.
5. Each workshop will be of 02 - 05 days duration.

APPENDIX "F"
(See Regulation 9xxiii, 13, 14 & 16)

CONTINUOUS INTERNAL ASSESSMENTS

a) **Workplace Based Assessments**

Workplace based assessments will consist of Generic as well as Specialty Specific competency Assessments and Multisource Feedback Evaluation.

Generic Competency Training & Assessments

The Candidates of all MD / MS / MDS programs will be trained and assessed in the following five generic competencies.

i. **Patient Care.**

- a. Patient care competency will include skills of history taking, examination, diagnosis, plan of investigation, clinical judgment, plan of treatment, consent, counseling, plan of follow up, communication with patient / relatives and staff.
- b. The candidate shall learn patient care through ward teaching, departmental conferences, morbidity and mortality meetings, core curriculum lectures and training in procedures and operations.
- c. The candidate will be assessed by the supervisor during presentation of cases on clinical ward rounds, scenario based discussions on patient management, multisource feedback evaluation, Direct Observation of Procedures (DOPS) and operating room assessments.
- d. These methods of assessments will have equal weightage.

ii. **Medical Knowledge and Research**

- a. The candidate will learn basic factual knowledge of illnesses relevant to the specialty through lectures/discussions on topics selected from the syllabus, small group tutorials and bed side rounds.
- b. The medical knowledge/skill will be assessed by the teacher during case based discussions and presentations to the supervisor.
- c. The candidate will be trained in designing research project, data collection, data analysis and presentation of results by the supervisor.

- d. The acquisition of research skill will be assessed as per regulations governing thesis evaluation and its acceptance.

iii. **Practice and System Based Learning**

- a. This competency will be learnt from journal clubs, review of literature, policies and guidelines, audit projects, medical error investigation, root cause analysis and awareness of healthcare facilities.
- b. The assessment methods will include case studies, presentation in morbidity and mortality review meetings and presentation of audit projects if any.
- c. These methods of assessment shall have equal weight-age.

iv. **Communication Skills**

- a. These will be learnt from role models, supervisor and workshops.
- b. They will be assessed by direct observation of the candidate whilst interacting with the patients, relatives, colleagues and with multisource feedback evaluation.

v. **Professionalism as per Hippocratic Oath**

- a. This competency is learnt from supervisor acting as a role model, ethical case conferences and lectures on ethical issues such as confidentiality, informed consent, end of life decisions, conflict of interest, harassment and use of human subjects in research.
- b. The assessment of residents will be through multisource feedback evaluation according to proformas of evaluation and its' scoring method.

Specialty Specific Competencies

- i. The candidates will be trained in operative and procedural skills according to a quarterly based schedule.
- ii. The level of procedural competency will be according to a competency table to be developed by each specialty.

iii. The following key will be used for assessing operative and procedural competencies:

a. **Level 1 Observer status**

The candidate physically present and observing the supervisor and senior colleagues

b. **Level 2 Assistant status**

The candidate assisting procedures and operations

c. **Level 3 Performed under supervision**

The candidate operating or performing a procedure under direct supervision

d. **Level 4 Performed independently**

The candidate operating or performing a procedure without any supervision

iv. **Procedure Based Assessments (PBA)**

- a. Procedural competency will assess the skill of consent taking, preoperative preparation and planning, intraoperative general and specific tasks and postoperative management
- b. Procedure Based assessments will be carried out during teaching and training of each procedure.
- c. The assessors may be supervisors, consultant colleagues and senior residents.
- d. The standardized forms will be filled in by the assessor after direct observation.
- e. The resident's evaluation will be graded as satisfactory, deficient requiring further training and not assessed at all.
- f. Assessment report will be sub
- g. A satisfactory score will be required to be eligible for taking final examination.

Multisource Feedback Evaluation

- i. The supervisor would ensure a multisource feedback to collect peer assessments in medical knowledge, clinical skills, communication skills, professionalism, integrity, and responsibility.
- ii. Satisfactory annual reports will be required to become eligible for the final examination

b) Completion Of Candidate's Training Portfolio

- i. The Candidate's Training Portfolio (CTP) will be published (or computer based portfolio downloadable) by the university.
- ii. The candidates would either purchase the CTP or download it from the KEMU web site.
- iii. The portfolio will consist of the following components
 - a) Enrollment details.
 - b) Candidate's credentials as submitted on the application for admission form.
 - c) Timeline of scheduled activities e.g dates of commencement and completion of training, submission of synopsis and thesis, assessments and examination dates etc (**Appendix H**)
 - d) Log Book of case presentations, operations and procedures recorded in an appropriate format and validated by the supervisor.
 - e) Record of participation and presentations in academic activities e.g lectures, workshops, journal clubs, clinical audit projects, morbidity & mortality review meetings, presentation in house as well as national and international meetings.
 - f) Record of Publications if any.
 - g) Record of results of assessments and examinations if any
 - h) Synopsis submission proforma and IRB proforma and AS&RB approval Letter
 - i) Copy of Synopsis as approved by AS&RB
- iv. Candidates Training Portfolio shall be assessed as per proforma given in "**Appendix-G**".

Supervisor's Annual Review Report.

This report will consist of the following components:-

- i. Verification and validation of Log Book of operations & procedures according to the expected number of operations and procedures performed (as per levels of competence) determined by relevant board of studies.
- ii. A 90 % attendance in academic activities is expected. The academic activities will include: Lectures, Workshops other than mandatory workshops, Journal Clubs, Morbidity & Mortality Review Meetings and Other presentations.
- iii. Assessment report of presentations and lectures
- iv. Compliance Report to meet timeline for completion of research project.
- v. Compliance Report on Personal Development Plan.
- vi. Multisource Feedback Report, on relationship with colleagues, patients.
- vii. Supervisor will produce an annual report based on assessments as per proforma in appendix-G and submit it to the Examination Department.
- viii. 75 % score will be required to pass the Continuous Internal Assessment on annual review.

APPENDIX " G "

(See Regulation 9ix, 9xxiii-d, 10, 11, 14 & 16)

Supervisor's Evaluation

PROFORMA FOR CONTINUOUS INTERNAL ASSESSMENTS

1.	Generic Competencies		
	(Please score from 1 – 100. 75% shall be the pass marks)		Component Score
	i.	Patient Care	20
	ii.	Medical Knowledge and Research	20
	iii.	Practice and System Based Learning	
		• Journal Clubs	04
		• Audit Projects	04
		• Medical Error Investigation and Root Cause Analysis	04
		• Morbidity / Mortality / Review meetings	04
		• Awareness of Health Care Facilities	04
	iv.	Communication Skills	
		• Informed Consent	10
		• End of life decisions	10
	v.	Professionalism	
		• Punctuality and time keeping	04
		• Patient doctor relationship	04
		• Relationship with colleagues	04
		• Awareness of ethical issues	04
		• Honesty and integrity	04
2.	Specialty specific competencies		
	Please score from 1 – 100. 75% shall be the pass marks		Score achieved
	Operative Skills / Procedural Skills		
3.	Multisource Feedback Evaluation (Please score from 1 – 100. 75% shall be the pass marks)		
4.	Candidates Training Portfolio (Please score from 1 – 100.75% shall be the pass marks)		
	(Please score from 1 – 100. 75% shall be the pass marks)		Component Score
	i.	Log book of operations and procedures	25
	ii.	Record of participation and presentation in academic activities	25
	iii.	Record of publications	25
	iv.	Record of results of assessments and examinations	25