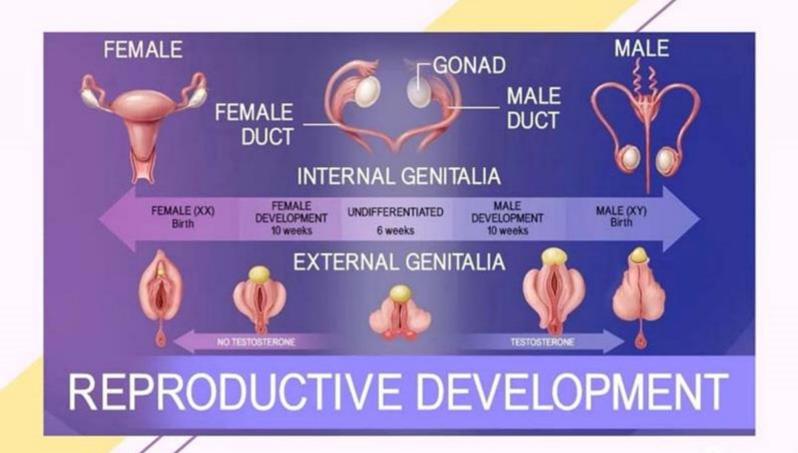
STUDY GUIDE-2ND YEAR MBBS

15th September- 17th October 2025

Duration: 5 Week

REPRODUCTIVE MODULE I



STUDY GUIDE FOR REPRODUCTIVE SYSTEM MODULE-I

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Module name: Reproductive System-I Year: Two Duration: 5 weeks (15 Sep-17 Oct 2025)

Timetable hours: Interactive Lectures, Case-Based Learning (CBL), Self-Study, Practicals, Skills,

Demonstrations

MODULE INTEGRATED COMMITTEE

MODULE COORDINATOR:	Professor Zia-ul-Islam (Anatomy)
CO-COORDINATORS:	Dr. Umme Rabab (Community Medicine)

DEPARTMENT RESOURCE PERSONS

BASIC HEALTH SCIENCES	CLINICAL AND ANCILLARY DEPARTMENTS
ANATOMY ● Professor Zia-ul-Islam	GYNAE/OBSTETRICS● Dr. Aisha Taj
BIOCHEMISTRY ● Professor Faiza Waseem	FAMILY MEDICINE ■ Dr. Rabeeya Saeed
• Dr. Saima Zainab	RESEARCH & SKILLS DEVELOPMENT CENTER ● Dr. Kahkashan Tahir
MOLECULAR PATHOLOGY ■ Dr. Sobia Rafiq	RADIOLOGYProfessor Muhammad Ayub Mansoor
PATHOLOGYProfessor Naveen Faridi	
PHYSIOLOGYProfessor Syed Hafeezul Hassan	

DEPARTMENT of HEALTH PROFESSIONS EDUCATION

- Professor Nighat Huda
- Professor Sobia Ali
- Dr. Afifa Tabassum

- Dr. Yusra Nasir
- Dr. Syed Asad Sibtain
- Dr. Asra Zia

LNH&MC MANAGEMENT

- Professor K.U. Makki, Principal LNH&MC
- Dr. Shaheena Akbani, Director A.A & R.T LNH&MC

STUDY GUIDE COMPILED BY: Department of Health Professions Education

INTRODUCTION

WHAT IS A STUDY GUIDE?

It is an aid to:

- Inform students how the student learning program of the module has been organized
- Help students organize and manage their studies throughout the module
- Guide students on assessment methods, rules, and regulations

THE STUDY GUIDE:

- Communicate information on the organization and management of the module. This will help the student to contact the right person in case of any difficulty.
- Define the objectives which are expected to be achieved at the end of the module.
- identifies the learning strategies such as Interactive Lectures, small group teachings, clinical skills, demonstrations, tutorials, and case-based learning that will be implemented to achieve the module objectives.
- Provide a list of learning resources such as books, computer-assisted learning programs, web-links,
 and journals, for students to consult to maximize their learning.
- Highlights information on the contribution of continuous and semester examinations on the Students' overall performance.
- Includes information on the assessment methods that will be held to determine every student's Achievement of objectives.
- focuses on information about examination policy, rules, and regulations.

CURRICULUM FRAMEWORK

Students will experience an *integrated curriculum* in the modules at LNMC per the JSMU guidelines theatre and the most recent developments that impact individual health.

INTEGRATED CURRICULUM:

Comprises of system-based modules such as Head and Neck, Neurosciences and Endocrinal orgy, and Reproductive System-I which link basic science knowledge to clinical problems. Integrated teaching means that subjects are presented as a meaningful whole. Students will be able to have a better understanding of basic sciences when they repeatedly learn about clinical examples.

Case-based discussions, computer-based assignments, and early exposure to clinics, wards, and skills acquisition in the ills lab and physiotherapy department are characteristics of the integrated teaching program.

LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding:

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning
- Practical
- Simulation Based Learning
- Self-Study

INTERACTIVE LECTURES:

In large groups, the Lecturer introduces a topic or common clinical conditions and explains the underlying phenomena through questions, pictures, videos of patient interviews, exercises, etc. Students are actively involved in the learning process.

SMALL GROUP DISCUSSION (SGD): This format helps students to clarify concepts and acquire skills or attitudes. Sessions are structured with the help of specific exercises such as patient cases, interviews, or discussion topics. Students exchange opinions and apply knowledge gained from Interactive Lectures, tutorials, and self-study. The facilitator's role is to ask probing questions, summarize, or rephrase to help clarify concepts.

CASE-BASED LEARNING: A small group discussion format where learning is focused on a series of questions based on a clinical scenario. Students answer the questions by applying relevant knowledge gained in clinical and basic health sciences during the module.

PRACTICAL: Basic science practical's related to anatomy, biochemistry, pathology, pharmacology, and physiology are scheduled for student learning.

SIMULATION BASED LEARNING: Skills relevant to the respective module are observed and practiced where applicable in the skills laboratory or Department of Physiotherapy.

SELF-STUDY: Students assume responsibility of heir learning through individual study, sharing and discussing with peers, and seeking information from Learning Resource Center, teachers, and resource persons within and outside the college. Students can utilize the time within the college's scheduled hours of self-study.



Apart from attending daily scheduled sessions, students too should engage in self-study to ensure that all the objectives are covered

MODULE: REPRODUCTIVE SYSTEM 1

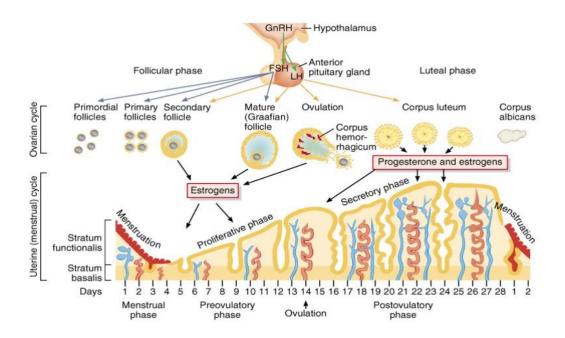
IMPORTANCE:

The module focuses on integrating basic health sciences into clinical medicine. It will be taught in a combination of lectures, tutorials, small group learning sessions, practical and skills classes, and possibly visits to clinical wards The module will explore the normal as well as the abnormal physiology of the male and female reproductive system. Students will be introduced to a variety of pathologies to facilitate a better understanding of how the reproductive system is impacted by diseases. It will give the road overview of the system. The module will also address reproductive hormonal changes associated with different stages of life correlating pathophysiology with clinical presentation. This will extend students' integrative abilities. Video and hands—sessions on basic examination skills will enhance students' understanding of the subject/topic.

AIMS OF THIS MODULE:

The module aims to provide:

- Knowledge and understanding of the structures and functions of the reproductive system and how it
 responds to changing metabolic needs of the body, organs, and, tissues, revealing the relevance of
 such knowledge to clinical practice.
- Knowledge and understanding of the origin and associated risk factors of common diseases of the reproductive system.
- Knowledge and prevention of common hormonal disorders associated with the reproductive system.
- Practice basic skills used in testing the function of this system in a simulated clinical setting.
- Knowledge of drugs used to treat reproductive system diseases.



COURSE TOPICS, OBJECTIVES, AND STRATEGIES

At the end of the module the students will be able to:

ANATOMY

OBJECTIVES	LEARNING STRATEGY
1. Pelvis and its types (Sacrum + Joints of Pelvis)	
Discuss the features of a bony pelvis	
Describe the boundaries of the pelvic inlet & outlet	
Differentiate between the male and female pelvis	
Discuss the important points of pelvimetry	
• Explain the types, articulations, ligaments, relations, and movements of joints of the	
pelvis	
List factors providing stability to the joints of the f pelvis	
2. Osteology of Sacrum	Tutorial /
Discuss the osteology of sacrum	Interactive
List the muscles and ligaments attached to the o sacrum	Lecture /
3. Pelvic Boundaries	Practical
Describe the anatomy of the pelvic walls	
Enumerate the muscles of the pelvic floor/pelvic diaphragm	
Discuss the attachment & actions of muscles in the f pelvic floor/pelvic diaphragm	
Discuss the blood supply, nerve supply& lymphatic drainage of pelvic floor muscles	
Describe the attachment & significance of pelvic fascia	
Discuss the clinical conditions associated with the pelvic floor & fascia	
Discuss the role of the pelvic floor in urinary and fecal continence	
4. Pelvic Malformations	
Discuss pelvic malformations in males and females	
5. Blood supply, venous and lymphatic drainage of the pelvis	Interactive
Describe the blood supply, nerve supply & lymphatic drainage of the pelvis	Lecture
6. Testis, Epididymis and Scrotum	
Describe the anatomy of the testis	
Describe the anatomy of the Ductus Deferens, Epididymis & Ejaculatory duct	Interactive
Describe the histological features of the testis and epididymis	Lecture/ Tutorial
7. Pelvic peritoneal reflections in male & female	Flipped
Describe pelvic reflections in males and females	Classroom
8. Perineum: division, spaces, and urogenital region	Interactive
Describe the gross anatomical features of the perineum	Lecture/
List the boundaries of the f perineum	Tutorial
Discuss the blood supply, nerve supply and lymphatic drainage of the perineum	
Describe the male urogenital triangle and its contents	
Describe the gross anatomy, blood supply, nerve supply and lymphatic drainage of the male urethra	

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Discuss the clinical conditions associated with the penis & male urethra	
Describe the female urogenital triangle and its contents	
9. Perineum: Anal triangle, Anal canal and ischiorectal Fossa	
Describe the division of the f perineum into anal and urogenital triangles	
Discuss the boundaries and features of the f anal triangle	
Discuss the importance of the of pectineal line concerning the vasculature and	
lymphatic drainage of the rectum and anal canal	
10. Nerves of pelvis s, perineum, and sacral plexus	
Enumerate the nerves innervating the pelvis	Interactive
Describe the Sacral plexus and its formation	Lecture /Small
Describe the branches and divisions of the sacral plexus	Group Session
Discuss coccygeal plexus	
Describe hypogastrictria plexus, its location, form, time, and branches	
• Discuss the injuries associated with the nerves of the pelvis, perineum, and sacral plexus	
11. Prostate, Seminal vesicles & Bulbourethral glands	
Describe the gross features of the following male internal organs:	
i. Prostate gland	
ii. Seminal Vesicles	
iii. Ductus deference	Interactive
iv. Bulbourethral glands	Lecture
Discuss their location, relations, blood supply, nerve supply & lymphatic drainage.	/Practical
Discuss the clinical conditions associated with h prostate gland, seminal vesicles &	
bulbourethral glands	
Describe the histological features of the prostate, seminal vesicle, and bulbourethral	
gland	
12. Development of the male reproductive system and Spermatogenesis	-
Describe the process of spermatogenesis	_
List the timeline of the development of the le reproductive system	_
Describe the process of development of parts of the f of the reproductive system	Interactive
Discuss the development of male external genitalia	Lecture/
Discuss the congenital anomalies of the male genital system	Practical
i. Cryptorchidism (un-descended testes)	1
ii. Hypospadiasis and other malformation of the urethraDiscuss the Congenital anomalies of male reproductive system (CBD)	_
Discuss the Development of male reproductive system	-
13. Gross anatomy of the female genital tract, Ovary & Fallopian tube	
State the location the of ovary & fallopian tube	-
Describe the parts & functions of fallopian tube	Intorostico
Explain the ligaments of the ovary & fallopian tube	Interactive Lecture/ Flipped
Describe the blood supply, nerve supply & lymphatic drainage of ovary & fallopian tube	Classroom/Small
Discuss the clinical correlates of ovary & fallopian tube	Group Session
· · ·	· '
 Describe the histological features of the ovary & fallopian tube Discuss Perineal pouches & contents 	1
·	
14. Gross anatomy of Uterus, Cervix & Vagina	

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2" YEAR WIBBS, REPRODUCTIVE SYS	
x, and vagina with surrounding	
Irainage of uterus, cervix & vagina	
ix, and vagina	Interactive
	Lecture/Case-
,	Based Learning/
nd migration	Small Group
3	Session
	/Practical
mesonephric ducts and the	_
e female reproductive system	
nale genital duct system	_
	_
in cens, spermatozoa, reyarg cens,	
ct system under a light microscope	
<u> </u>	
ference	Practical /
	Small group
ouisouretinal glana	discussions
es in different stages)	
	_
	-
liopian tube	_
	-
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	_
ometrium	
ervix & vagina under a light	
y 9 yagina	-
x & vagina	-
ads.	Interactive
	Interactive
nary glands.	Lecture Page 10
	Irainage of uterus, cervix & vagina

BIOCHEMISTRY

ODUCTIVES		
OBJECTIVES	STRATEGY	
1. Male Sex Hormones		
List the male sex hormones		
Discuss the production of male sex hormones		
Explain the synthesis, chemical structure, mechanism of action, and metabolic functions of male sex hormones		
Discuss the hypothalamic-pituitary axis of male sex hormones		
Discuss the regulation and feedback mechanism of male sex hormones	1.1	
Describe the clinical diseases and complications associated with male sex hormones	Interactive Lecture/	
Discuss the clinical importance of Male Sex hormones (e.g. Infertility)	Tutorial/Case-	
Interpret relevant clinical conditions correlated with their laboratory investigations	Based	
2. Female sex hormones	Learning	
List the female sex hormones		
Discuss the production of female sex hormones		
Explain the synthesis, chemical structure, mechanism of action, and metabolic functions of female sex hormones		
Discuss the hypothalamic-pituitary axis of female sex hormones		
Discuss the regulation of female sex hormones and the feedback mechanism		
Describe the clinical diseases and complications associated with female sex hormone	es es	
3. Pituitary Hormone and Menstrual Cycle		
Explain the biochemical functions of the female reproductive system		
Discuss hormonal regulation (the hypothalamic-pituitary-ovarian axis) during prepuberty, puberty, and menopause		
Describe the menstrual cycle (Ovarian and uterine cycles)		
Discuss the three phases of the ovarian cycle (Follicular, Ovulation, and Luteal)		
Discuss the three phases of the uterine cycle (Menstrual, Proliferative, and Secretory)	<u>')</u>	
Explain the hormonal changes at menarche and menopause		
Discuss the clinical abnormalities of the menstrual cycle and its biochemical investigations		
4. Biochemical changes during menopause	Interactive	
Define menopause	Lecture	
Discuss the hormonal and biochemical changes during menopause		
Discuss the clinical conditions associated with menopause		
Describe the types of amenorrhea		
5. Biochemical role of the Placenta		
List the placental hormones		
Discuss the cells type and production of placental hormones		
Explain the synthesis, chemical structure, mechanism of action, and metabolic function of placental hormones	ons	
Discuss the hypothalamic-pituitary axis of placental hormones		
Discuss the regulation of placental hormones and feedback mechanism		

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 Describe the clinical conditions associated with placental hormones and their lab investigations 	
6. Amniotic fluid Analysis	
Discuss the normal composition of amniotic fluid	
List the biochemical markers of fetal development	
Discuss the functions of amniotic fluids	CBL
Describe the clinical conditions associated with amniotic fluid	
Discuss the laboratory investigations of amniotic fluid	
7. Structure of DNA & RNA	
Explain the central dogma of molecular biology	
Describe the biochemical structure, types, and functions of DNA and RNA	
Discuss briefly the genetic disorders	Interactive
8. DNA Replication	Lecture/
Define Replication	Tutorial/Case- Based
Classify the types of replication in prokaryotes and eukaryotes	Learning
Describe the steps of DNA Replication	o o
• Discuss the disorders related to DNA replication and repair (e.g. Xerodermapigmentosa and radiation damage)	
9. Transcription	
Define Transcription	
Explain the process of Transcription in Prokaryotes	
Describe the mechanism of transcription in Eukaryotes	
Discuss the process of Post transcription modification (mRNA, tRNA, and rRNA)	
Explain the retroviruses of cancers and AIDS and the effects of drugs	Interactive
10. Translation	
Define Translation	Lecture
Explain the genetic code, codon, and wobble hypothesis	
Explain the process of Translation	
Discuss the inhibitors of protein synthesis	
Discuss the process of Post translation modification	
Describe the different types of mutations	
11. Menstrual abnormalities	
Discuss the clinical importance of menstrual cycle abnormalities	
Interpret relevant clinical conditions correlated with their laboratory investigations	
12. Amniocentesis	Interactive
Discuss the clinical importance of amniocentesis	Lecture/
Interpret relevant clinical conditions correlated with their laboratory investigations	Tutorial
13. Mutations	
Discuss the clinical importance of mutations (e.g. sickle cell anemia etc.)	
Interpret relevant clinical conditions correlated with their laboratory investigations	
14. Pregnancy test	
Outline the methods for the performance of pregnancy test	Practical
Explain the principle of the HCG one-step pregnancy test	

 Perform urine pregnancy test by using a dipstick (β-HCG levels)
Interpret relevant clinical conditions correlated with their laboratory investigations
15. Polymerase Chain Reaction (PCR)
Explain the principle and procedure of PCR
Describe the applications of PCR
•Interpret relevant clinical conditions correlated with their laboratory investigations

PHYSIOLOGY

OBJECTIVES	LEARNING STRATEGY
1. Spermatogenesis, Semen & Capacitation of Sperms	el: I
Explain the stages of spermatogenesis	Flipped Classroom
Describe the hormonal control of spermatogenesis	/ Tutorial/
Discuss Interpretation of a semen sample	Practical
Discuss Premenopausal syndrome	
2. Male Sex Hormone: Testosterone & its functions	
Describe the synthesis, function, and regulation of male sex hormones	
3. Abnormalities of Male sexual function	
Discuss the abnormalities of male sexual function (hypo and hypergonadism)	Interactive
4. Functions of Ovary	Lecture/
Discuss oogenesis, stages of follicle development through ovulation and formation of corpus luteum	Small Group Discussion
Discuss Functions of Ovaries and Ovarian Hormones	/ Tutorial /
Discuss Polyeystic Ovarian syndrome	CBL/ SDL
Discuss Sexually transmitted diseases	•
Describe Endometrial & Ovarian cycle	
Discuss Hormonal control of Menstrual cycle and physiological changes in pregnancy	
5. Puberty, Menstrual Cycle, Menarche & Menopause	
Describe the synthesis, function, and regulation of hormones in the n female reproductive system	Interactive
Describe the hormonal changes and control mechanism of the changes that occur during puberty	Lecture/ Small
Explain the secondary sexual characteristics that develop during puberty in males and females	Group Discussion/
Explain the control of secretion of FSH and LH through negative and positive feedback during the menstrual cycle	Case-Based Learning /
Describe the cyclical changes that occur in endometrium and hormonal mechanisms that control these changes	SDL
Discuss Post-Menopausal syndrome	
6. Hormones of Pregnancy and Functions of Placenta	
Describe the functions of various hormones associated with pregnancy: HCG,	Interactive
Somatomammotropin, Relaxin, Estrogen and Progesterone.	Lecture/
• Explain the functions of placenta and various factors associated with transport across placenta.	Small
List hormones secreted by the placenta and their actions	Group
Interpret endocrine assays during the course of pregnancy	Discussion
6. Maternal Changes During Pregnancy & Parturition	

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Describe the physiological changes during pregnancy concerning all organs and systems	
Describe briefly parturition, especially its stages, mechanism & hormones	
Discuss female reproductive system (Practical / SGD)	
7. Mammary Gland & Lactation	
Describe the hormonal requirements for the development of the mammary gland during	
pregnancy and milk ejection reflexes	
8. Physiology of Lactation	Interactive
Describe the Physiology of Lactation	Lecture/ Small
	Group
Describe the hormonal control of lactation	Discussion

COMMUNITY MEDICINE

	OBJECTIVES	LEARNING STRATEGY
•	Discuss Public Health aspect of reproductive Health	Tutorial

OBSTETRICS & GYNECOLOGY

OBJECTIVES	LEARNING STRATEGY	
Uterine Prolapse		
Discuss the anatomy of Uterus & Vagina and their anatomical support		
Correlate the anatomical defects causing this problem	Interactive	
Risk Factors causing this problem	Lecture	
Outline of management		
Use of Contraceptives	Interactive	
Discuss the different methods of contraception	Lecture	

PATHOLOGY

OBJECTIVES	LEARNING STRATEGY	
1. Ovarian cyst		
Describe the common types and pathophysiology of benign ovarian cysts.		
entify clinical and histological features of benign ovarian cysts.		
Introduction to the basic understanding of polycystic ovarian syndrome.		
2. Dysfunctional Uterine Bleeding		
Define dysfunctional uterine bleeding (DUB)	Interactive	
Classify abnormal uterine bleeding according to age group and etiology	Lecture	
Discuss the etiology, pathogenesis, morphology and clinical features of abnormal uterine		
bleeding and An ovulatory cycle.		
• Discuss the etiology, pathogenesis, morphology and clinical features of acute and chronic		
Endometritis, Endometriosis,		
adenomyosis and Endometrial Polyps		

MOLECULAR PATHOLOGY

OBJECTIVES	LEARNING STRATEGY
1. Molecular Diagnosis of Genetic Diseases (DNA sequencing)	
Provide an overview of (DNA sequencing)	Interactive Lecture
Describe the Steps involved in (DNA sequencing)	Lecture

RESEARCH & SKILLS DEVELOPMENT CENTER

TOPICS & OBJECTIVES	
Per vaginal examination	
Perform per vaginal examination by examination and inspection of external genitalia.	
learn the technique of speculum insertion and proper handling.	
Identify and inspect the cervix using the speculum.	Hands on /
Perform a bimanual finger examination to palpate e cervix and the cervical	Hands-on / Practical
Identify the uterus size and position.	Tractical
Palpate adnexa and fallopian tubes.	
Prostate examination	
Perform prostate examination	

FAMILY MEDICINE

TOPICS & OBJECTIVES	LEARNING STRATEGIES
Discuss the basic principles of Health Care for Older Adults	Interactive Lecture

RADIOLOGY

TOPICS & OBJECTIVES	LEARNING STRATEGIES
Imaging of Male & Female Pelvic Organs	
Discuss Imaging of Male & Female pelvic organs	Tutorial

LEARNING RESOURCES:

SUBJECT	RESOURCES
ANATOMY	A. GROSS ANATOMY 1. K.L. Moore, Clinically Oriented Anatomy 2. Neuro Anatomy by Richard Snell B. HISTOLOGY 1. B. Young J.W. Health Wheather's Functional Histology C. EMBRYOLOGY 1. KeithL. Moore. The Developing Human 2. Langman's Medical Embryology
BIOCHEMISTRY	TEXTBOOKS 1. Harper's Illustrated Biochemistry 2. Lehninger Principle of Biochemistry 3. Biochemistry by Devlin
	 TEXTBOOKS Textbook of Medical Physiology by Guyton and Hall Ganong'S Review of Medical Physiology Human Physiology by Lauralee Sherwood Berne and Levy Physiology Best and Taylor Physiological Basis of Medical Practice REFERENCE BOOKS Guyton and Hall Physiological Review Essentials of Medical Physiology by Jaypee Textbook of Medical Physiology by Indu Khurana Short Textbook of Physiology by Arthur NMS Physiology

ASSESSMENT METHODS:

- Best Choice Questions (BCQs) also known as MCQs (Multiple Choice Questions)
- Objective Structured Practical/Clinical Examination (OSPE or OSCE)

Internal Evaluation

- Students will be assessed comprehensively through multiple methods.
- 20% marks of internal evaluation will be added to JSMU final exam. That 20% may include class tests, assignments, practicals, and the internal exam which will all have specific marks allocation.

Formative Assessment

Individual departments may hold quizzes or short answer questions to help students assess their learning. The marks obtained are not included in the internal evaluation

For JSMU Examination Policy, please consult the JSMU website!

More than 75% attendance is needed to sit for the internal and final examinatio



LNH&MC EXAMINATION RULES & REGULATIONS

- Student must report to examination hall/venue, 30 minutes before the exam.
- Exam will begin sharply at the given time.
- No student will be allowed to enter the examination hall after 15 minutes of scheduled examination time.
- Students must sit according to their roll numbers mentioned on the seats.
- Cell phones are strictly not allowed in the examination hall.
- If any student is found with a cell phone in any mode (silent, switched off, or on) he/she will not be allowed to continue their exam.
- No students will be allowed to sit in an exam without University Admit Card, LNMC
 College ID Card, and Lab Coat
- Students must bring the following stationary items for the exam: Pen, Pencil, Eraser, and Sharpener.
- Indiscipline in the exam hall/venue is not acceptable. Students must not possess any written material or communicate with their fellow students.

SCHEDULE

WEEKS	2 ND YEAR	MONTH
		15 th September 2025
WEEK 1-5	REPRODUCTIVE MODULE – I	
		17 th October 2025
	PRE-PROFESSIONAL EXAM	

^{*}Final dates will be announced later.