Faisalabad Medical University

BLOCK F

2nd Year MBBS

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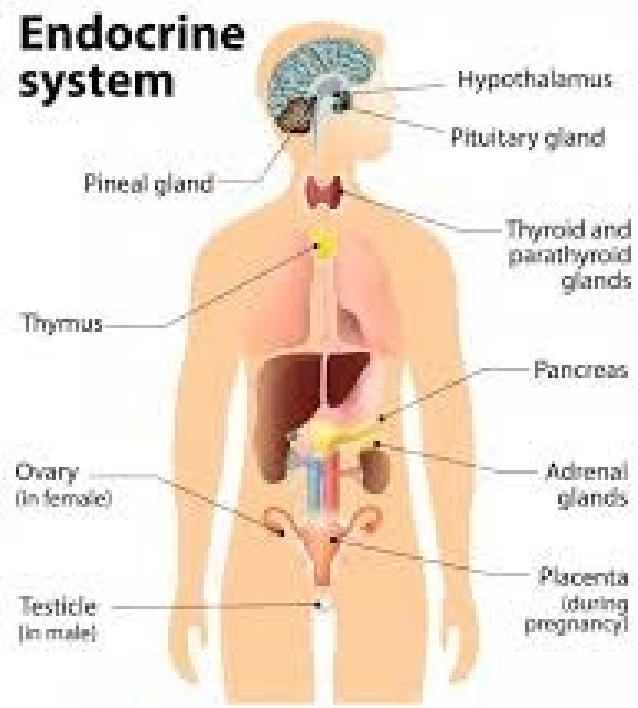
ENDOCRINE I MODULE



Module Committee

Chairperson Curriculum Committee	Prof. Dr. Humair Gulnaz	Professor of Anatomy
Curriculum Coordinator	Dr. Ayesha Ayub	Incharge HPERD
Module Coordinator	Dr. Surayya Yousaf	Anatomy Department
Academic Team Members		
Biochemistry	Dr. Tahira Bashir	Biochemist, Biochemistry Department
Anatomy	Dr. Surayya Yousaf	Anatomy
Physiology	Dr. Sidra Latif	Senior Demonstrator Physiology Department
Community Medicine	Dr. Fozia Zahur Malik	Demonstrator Community Medicine
Pharmacology	Dr. Akfish Zaheer	Assistant Professor Pharmacology
Forensic Medicine	Dr. Madiha Rehman	Sr. Demonstrator Forensic Medicine Department
Pathology	Dr. Amna Ghaffar	Demonstrator Pathology
Medicine	Dr. Zaheer	Senior Registrar Medicine
Behavioral Sciences	Dr. Sihha	PGR Psychiatry
ENT	Dr. Bilal	Senior Demonstrator Community Medicine
Pediatrics	Dr. Sumaira Irfan	Assistant Professor of Pediatrics
Neurosurgery	Dr Anum Wahab	

List of themes

Serial number	Theme	Duration
1	• Tall stature	1 weeks
2	• Neck swelling with bulging eyes	1 week
3	• Increased thirst and urination • Moon face	1 week

General learning outcomes

At the end of this module, the 2nd year students will be able to understand:

1) Development, structure, hormones and regulation of pituitary gland, thyroid gland, parathyroid gland, endocrine pancreas, and adrenal glands
2) Describe the etiology, pathophysiology, relevant clinical features and common investigations of disorders of these glands
3) Describe the basic concepts and components of medical professionalism

Sr. No	subject	Topic	Learning objectives	Teaching strategies	Duration	Assessment
Theme 1:Tall stature						
1	**Embryology**	Pituitary gland	• Describe development of pituitary gland	Lecture	1hrs	MCQS /OSPE
2	**Histology**	Pituitary gland	• Describe microscopic features of pituitary gland	Lecture	1hrs	MCQS /OSPE

4) Describe the steps of writing a research proposal

3	**Physiology**	Introduction to endocrinology	• Describe the chemical messengers in the body • Describe the classification of hormones • Describe mechanisms of synthesis of hormones • Describe mechanisms of hormone Secretion, Transport and Clearance	Lecture	1hrs	MCQS
4		Mechanisms of Action of Hormones	• Explain mechanisms of Action of hormones • Describe second messenger mechanisms for mediating intracellular hormonal functions • Describe measurement of hormone • Concentrations in the Blood	Lecture	1hrs	MCQS
5		Pituitary gland Physiological anatomy and its control	• Describe physiological anatomy of pituitary gland • Describe hypothalamus Control of • Pituitary Secretion	Lecture	1hrs	MCQS

6		Physiological Functions of Growth Hormone	• Describe Growth hormone's effect on growth and metabolism • Explain the structure, mechanism of action and physiological effects of Insulin-Like Growth Factors • Describe regulation of Growth • Hormone	Lecture	1hrs	MCQS
7		Physiological Functions of Posterior Pituitary hormones	• Describe formation and physiological functions of Oxytocin • Describe formation and physiological functions of ADH	Lecture	1hrs	MCQS
8	**Biochemistry**	Hormones Introduction	Define hormone and differentiate and differentiate between autocrine, endocrine and paracrine Classify hormone on various basis Illustrate mechanism of action Define 2nd messenger and its role	Lecture	1hrs	MCQS

9		Anterior pituitary gland	• Describe various hormone of anterior pituitary gland • Describe chemistry, mechanism of action and regulation of growth hormone with its related clinical disorders	Lecture	1hr	MCQS
10		Posterior pituitary gland	• Describe various hormone of posterior pituitary gland • Describe chemistry, mechanism of action secretion and regulation of hormone of posterior pituitary gland	Lecture	1hr	MCQS
11		Pituitary hormone 1	• Discuss growth hormone and the hormone of posterior pituitary gland	SGD	2hrs	MCQS
12	Medicine	Acromegaly	Describe the pathophysiology, clinical features and investigations of patient with Acromegaly and Gigantism	Lecture	1hr	MCQS

13		Diabetes insipidus	• Describe the etiology, clinical features and investigations of a patient with diabetes insipidus	Lecture	1hr	MCQS
14	**Community medicine**	Diabetes melitus	• Classify Diabetes mellitus • Describe the epidemiology of Diabetes mellitus • Discuss the risk factors of Diabetes Melitus • Describe the prevention of Diabetes melitus			
14	**Neurosurgery**	Tumor of posterior pituitary gland	• Explain the types, clinical features, CT and MRI findings and management of pituitary tumors			
15	**Pediatrics**	Growth chart	• Describe the fundamentals of growth charts in pediatric practices	Lecture	1hr	MCQS
	PRIME	Data Collection Procedures	• Discuss data collection method	Lecture	2hr	MCQS

Theme :2 Neck swelling

16	Anatomy	Thyroid gland	• Describe the gross structure, lobes, relations, blood supply, venous drainage, nerve supply and lymphatic drainage of thyroid gland	Skill lab	2hr	MCQS & OSPE
17	Embryology	Development of thyroid and parathyroid gland	• Describe the developmental events and anomalies of thyroid and parathyroid gland	Lecture	1hr	MCQS &
18	Histology	Thyroid & parathyroid gland	• Describe the microscopic features of thyroid and parathyroid	Lecture	1hr	MCQS & OSPE
19	Physiology	Introduction of thyroid gland	• Describe formation, Secretion and transport of thyroid hormones • Explain mechanism of action of thyroid hormones • Explain the actions of thyroid hormones on cellular metabolism	Lecture	1hr	MCQS

20		Physiological functions &regulation of thyroid hormone	• Describe Physiological effects of Thyroid Hormone on Growth, metabolism and body systems • Describe Regulation of Thyroid Hormone Secretion	Lecture	1hr	MCQS
21		Physiological functions and Control of the Parathyroid hormone	• Explain Mechanism of action PTH • Describe Effect of Parathyroid Hormone on Calcium and Phosphate concentrations • Describe Control of Parathyroid Secretion			
22		Physiological role of VIT D and Calcitonin in Calcium metabolism	• Explain Role of Vit. D in Calcium and phosphorus metabolism • Explain physiological functions of calcitonin	Lecture	1hr	MCQS
23	Biochemistry	Thyroid gland	Describe the hormone secreted from thyroid gland Describe biosynthesis, secretion, mechanism of action, regulation and metabolic effects of thyroid gland and calcitonin with its clinical disorders	Lecture	1hr	MCQS

24		Parathyroid gland	• Describe the hormone secreted from parathyroid gland • Describe biosynthesis, secretion, mechanism of action, regulation and metabolic effects of parathyroid hormone and with its clinical disorders	Lecture	1hr	MCQS
25	Medicine	Thyroid disorders	• Explain the clinical features of hyperthyroidism & hypothyroidism	Lecture	1hr	MCQS
26	Pharmacology	Anti thyroid drugs	• Describe the types, site of action mechanism of action of Antithyroid drugs	Lecture	1hr	MCQS
	PRIME	Ethical principles for medical research	• Describe principals for medical research application	Lecture	1hr	MCQS

Week :3 Increased thirst and urination

28	Anatomy	Histology	• Describe the histological features of pancreas and differentiate between exocrine and endocrine parts of pancreas	Lecture	1hr	MCQS& OSPE
29	Physiology	Mechanism of action of insulin	• Explain Mechanism of action of insulin • Describe the Control of Insulin Secretion	Lecture	1hr	MCQS
30		Physiological Effects of insulin on carbohydrates,	• Describe the effects of insulin on carbohydrates, proteins and Fats metabolism	Lecture	1hr	MCQS
31		Physiology of Glucagon	• Describe regulation of glucagon and its effects • Describe the physiological actions of Somatostatins	Lecture	1hr1hr	MCQS
32		Physiological effects of Diabetes Mellitus	Describe Effects of hyperglycemia /hypoglycemia on body functions and explain insulin resistance	Lecture	1hr	MCQS

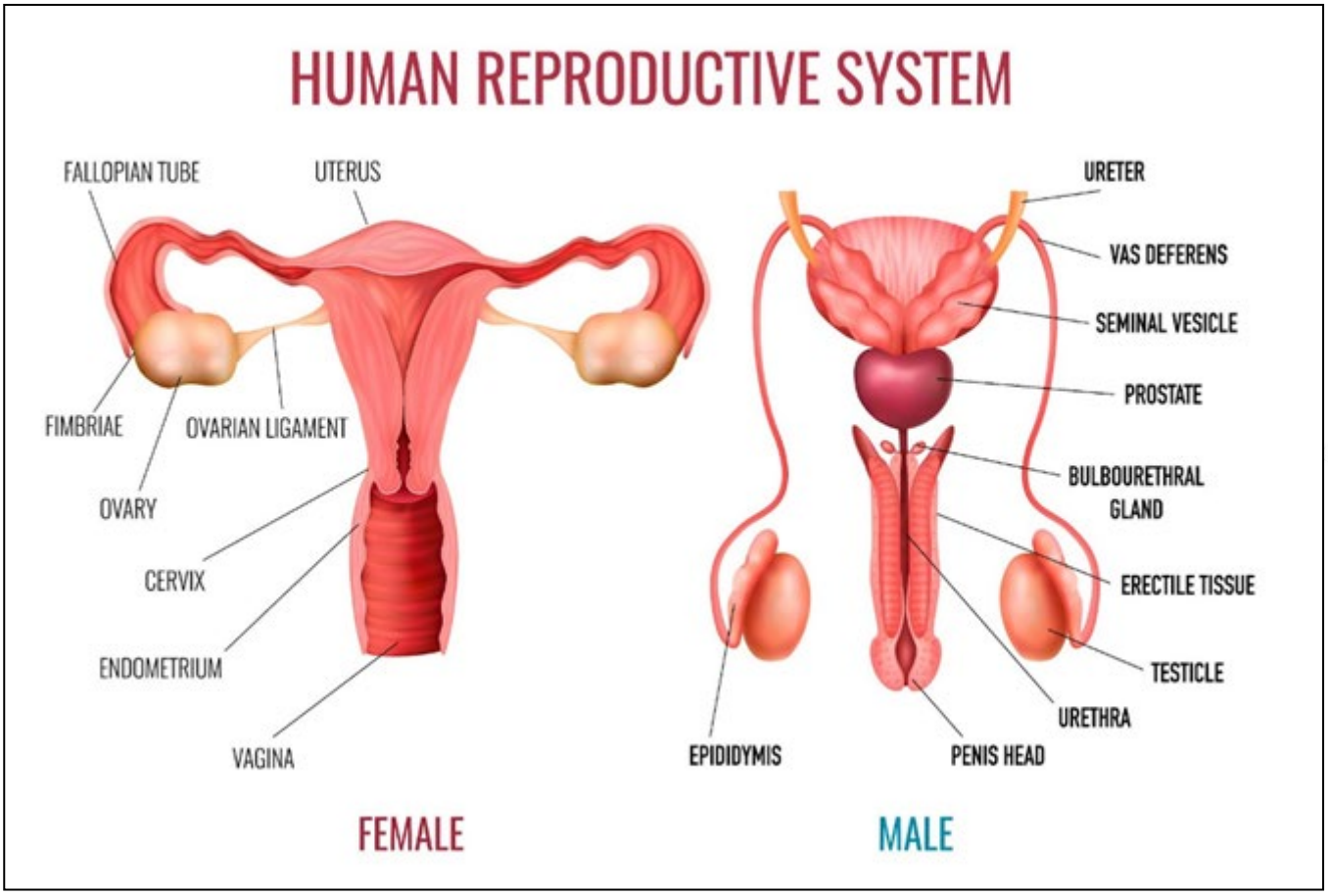
33	Biochemistry	Pancreas	• Describe the hormone secreted from pancreas • Describe biosynthesis, secretion, mechanism of action, regulation and metabolic effects of pancreatic hormone and with its clinical disorders	Lecture	1hr	MCQS
34		Pancreatic secretion	• Discuss pancreatic secretion	SGD	2hr	
35	Pharmacology	Antidiabetic drugs	• Classify the insulin with their duration of action • Explain the mechanism of action and complication of insulin therapy	Lecture	1hr	MCQS
36	Medicine	Diabetes Mellitus	Explain the short-term and long-term complications of Diabetes Mellitus Describe the pathophysiology, clinical features and treatment of Diabetes	Lecture	1hr	MCQS

	PRIME	Models of leadership & management	• Discuss different models of leadership and management	Lecture	1hr	MCQS
Theme: 4 Moon face						
37	Anatomy	Adrenal gland	• Describe the gross anatomy and relations of adrenal glands on both sides	Skill lab	2hr	MCQS& OSPE
38	Embryology	Adrenal gland	• Describe the development of adrenal gland	Lecture	1hr	MCQS
39	Histology	Adrenal gland	• Describe the microscopic picture of adrenal gland and differentiate between the various histological zones of adrenal gland	Lecture	1hr	MCQS
40	Physiology	Physiological functions of Aldosterone	Describe Types, Mechanisms and regulation of mineralocorticoids Describe the physiological Effects of Aldosterone (Renal, Circulatory and others)	Lecture	1hr	MCQS

41		Physiological Functions of the Glucocorticoids	• Describe Types and Mechanisms of Glucocorticoids actions • Describe Effects of Cortisol on Carbohydrate, Proteins and Fat Metabolism • Describe role of Cortisol in Stress, • Inflammation and Allergy	Lecture	1hr	MCQS
42		Physiological functions Adrenocorticotropic Hormone ACTH	• Describe ACTH Secretion & mechanism of Action	Lecture	1hr	MCQS
43	Biochemistry	Adrenal cortical hormone	• Describe the hormone secreted from adrenal gland • Describe biosynthesis, secretion, mechanism of action, regulation and metabolic effects of adrenal cortical hormone and with its clinical disorders	Lecture	1hr	MCQS

44	Medicine	Cushing`s syndrome	• Describe the clinical features and complications of Cushing`s	Lecture	1hr	MCQS
45		Addison`s disease	• Describe the clinical features and complications of Addison`s	Lecture	1hr	MCQS

REPRODUCTION I MODULE



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Medicine	Dr. Zaheer	Senior Registrar Medicine
Behavioral Sciences	Dr. Sinha	PGR Psychiatry
Gynecology and Obstetrics	Dr.Ammara Niaz	Assistant Professor
Surgery	Dr. Sana Akhtar	Senior Registrar

List of Themes

Serial number	Theme	Duration
1	Pregnancy and child birth	2 weeks
2	Infertility	1 week

General learning outcomes

At the end of this module, the 2nd year students will be able to understand:

1) Describe the development, structure and functions of bony pelvis, uterus, ovaries and perineum

2) Describe the development, structure and functions of mammary glands

3)Explain the contents and mechanism of formation of milk

4)Describe the development, structure and functions of male genital organs

5)Explain the synthesis, mechanism of action, physiological effects and regulation of sex hormones in males and females and hormones released from placenta

6)Describe the physiology of gestation and parturition

7)Describe basic statistical tests and their significance

8)Describe the concept of empathy as part of professionalism

9)Explain the steps of research evaluation, its validity and reliability

Sr.No	subject	Topic	Learning objectives	Teaching strategies	Duration	Assessment
Theme 1: Pregnancy & child birth						
1	Anatomy	Bony Pelvis	• Identify structures forming boundaries of pelvis • Name the boundaries of inlet and outlet of pelvis • Describe differences between male and female pelvis • Enumerate different types of pelvis • Describe differences between true and false pelvis	Skill lab	2 hrs	MCQS /OSPE

2	Anatomy	Uterus	• Describe gross structure, location, positions and relations of uterus • Describe its various supports • Describe its blood supply • Describe boundaries of pouch of Douglas & its clinical significance	Lecture	2 hrs	
3	Anatomy	Fallopian tube	• Describe the gross structure, location, relations and various parts of fallopian tube • Describe various components of broad ligaments • Describe its blood supply	Skill lab	2 Hrs	MCQS & OSPE

4	Anatomy	Ovary	• Describe the gross structure, location and relations of ovary • Describe its various supports • Enlist its blood supply • Describe clinical significance	SGD	2 Hrs	MCQS & OSPE
5	Anatomy	Pelvic floor	• Describe the structure forming pelvic floor • Name the muscles making pelvic floor • Describe attachments and actions & nerve supply of muscle forming Pelvic floor	Skill ab	2hr	MCQS & OSPE
6	Anatomy	Sacrum	• Describe the general and special features of sacrum • Describe its attachment	Skill Lab	2hr	MCQS & OSPE
7	Anatomy	Perineal pouches	• Describe the boundaries of superficial & deep perineal pouches	Lecture	1hr	MCQS & OSPE

8	Anatomy	Ischiorectal fossa	• Describe the boundaries of ischiorectal fossa • Describe its clinical significance	Skill lab	2hr	MCQS & OSPE
9	Anatomy	Mammary glands	• Describe the gross structure of mammary glands • Describe its blood supply and lymphatic drainage • Describe its clinical significance	SGD	2hr	MCQS
10	Embryology	Development of uterus	• Describe the development of uterus • Enlist the various developmental Anomalies of uterus • Describe the remnants of mesonephric and Parmesonephric ducts in females	Lecture	1hr	MCQS
11	Embryology	Development of ovary & fallopian tube	• Describe the development of ovaries & fallopian tubes	Lecture	1hr	MCQS

12	Embryology	Development of mammary glands	• Describe the development of mammary gland • Enlist various developmental anomalies of mammary gland along with embryological reasons	Lecture	1hr	MCQS
13	Histology	Uterus	• Describe the microscopic structure of uterus • Discuss the microscopic features of endometrium in different phases of menstrual cycle	Lecture	1hr	MCQS
14	Histology	Ovary & fallopian tube	• Describe the microscopic features of fallopian tube & ovary • Describe the structure of different types of follicles	Lecture	1hr	MCQS

15	Histology	Mammary gland	• Describe the microscopic features of mammary gland • Describe the histological differences among different phases as pre puberty, puberty and lactation	Lecture	1hr	MCQS & OSPE
16	Physiology	Overview of Reproductive System	• Describe the spermatogenesis • Explain the function of prostate gland • Describe the composition of semen	Lecture	1hr	MCQS
		Functions of Testosterone	Relate the functions of testosterone with its secretion and metabolism Describe the intracellular mechanism of action of testosterone Relate the control of secretion of testosterone with its congenital and acquired abnormalities	Lecture	1hr	MCQS

		Hormonal cyclical changes of Female reproductive system	• Describe the monthly ovarian cycle • Describe the effects of gonadotropic hormones on the ovaries. • Describe the functions of estrogens • Describe the functions of progesterone	Lecture	1hr	MCQS
		Physiological changes in Pregnancy	• Describe the transport of fertilization ovum in the fallopian in the uterus. • Explain the effects of HCG in causing persistence in pregnancy • Describe the secretion of estrogen and progesterone by placenta	Lecture	1hr	MCQS
		Parturition	• Explain the process of parturition and involution of the uterus after parturition	Lecture	1hr	MCQS
		Milk production	• Explain the functions of prolactin • Describe the ejection or “let down” of milk.	Lecture	1hr	MCQS

		Problems of prematurity	• Describe Growth and Functional Development of the Fetus • Describe adjustments of the newborn to Extra Uterine Life • Discuss Special Functional Problems in the Neonates • Discuss Special Problems of Prematurity	Lecture		MCQS
	Community medicine	MCH care and Safe motherhood and its components	• Enlist the objectives of MCH • Define safe motherhood • Describe the steps of antenatal and postnatal care, family planning and emergency obstetric care • Differentiate between Basic and Comprehensive EMONC services	Lecture	1hour	MCQS
		Maternal mortality	• Identify the high risk pregnancy • Describe the causes, impact and prevention of maternal mortality in Pakistan	Lecture	1hour	MCQS

		Breast feeding	• Define mother and child as one unit • Explain the importance of breast feeding • Define rooming • Define Kangroo care	Lecture	1hour	MCQS
		Family planning	• Define family planning • Classify Contraceptive Methods • Discuss the Contraceptive prevalence • Describe situational analysis • Enlist Methods exercised at Community level& Health Care Settings • Discuss Motivation and counselling for contraception	Lecture	1hour	MCQS
	Forensic medicine	Abortion	• Define abortion • Describe its various types • Describe criminal abortion • Enlist clinical findings in a case of criminal abortion • Describe the findings of therapeutic abortion	Lecture	1hour	MCQS

	Surgery	Carcinoma of breast	• Describe the etiology, pathological types and clinical presentation of carcinoma of breast	Lecture		MCQS
	PRIME	Plagiarism	• Describe plagiarism and how to avoid it	Lecture		
Theme 2 Infertility						
	Anatomy	Scrotum, Testes	• Describe the anatomy& nerve supply of scrotum • Describe the covering of scrotum • Describe the coverings of testis	Skill lab	2hr	MCQS& OSPE
		Epididymis & ductus deferens	• Describe epididymis, ductus deferens and seminal vesicles • Describe clinical correlates of male genital system • Enlist its blood and nerve supply	Skill lab	2hr	MCQS& OSPE

	Anatomy	Female External genitalia	• Describe the structure of female external genitalia	Skill lab	2 hr	MCQS & OSPE
	Embryology	Genitalia	• Describe the development of male and female genital systems		1hr	MCQS
		Gonads and genital ducts	• Describe the development of testis • Discuss the factors responsible for descent of testis • Describe the developmental anomalies of testis • Describe the development of epididymis, vas deferens and seminal vesicle • Describe the development of vagina • Enlist the remnants of mesonephric and paramesonephric ducts in male	lecture	1hr	MCQS

	Histology	Testis	• Describe general microscopic features of testis • Describe blood testis barrier • Describe seminiferous tubules and its various cells	Lecture	1hr	MCQS& OSPE
	Histology	Male genital ducts	• Describe the histological features of epididymis, seminal vesicle & ductus deferens	Lecture	1hr	MCQS& OSPE
	Physiology	Male sex hormone	• Describe the structure, secretion, mechanism of action, physiological actions and regulation of Testosterone • Describe the hormonal changes occurring in puberty in males and females	Lecture	1hr	MCQS

		Female sex hormone	• Describe the structure, secretion, mechanism of action, physiological actions and regulation of Estrogen and Progesterone • Describe the mechanism of Ovulation	Lecture	1hr	MCQS
		Pregnancy test	• Perform pregnancy test	Skill lab	1hr	MCQS
	Biochemistry	Sex Hormones 1 (estosterone Estrogen Progesterone)	Describe the chemistry of hormones Describe the synthesis of hormones Illustrate the enzyme deficiencies and their manifestations Explain the diagnostic role of 17-ketosteroids' excretion in urine	Lecture	1hr	MCQS

		Sex hormone 2	• Describe the mechanism of action of these hormones and their receptors • Describe the classical and non-classical target organs of these hormones • Explain the metabolic functions of these hormones • Describe the regulation of these hormones especially by FSH & LH	Lecture	1hr	MCQS
	Biochemistry	Sex hormone 3	• Discuss the andropause and menopause • Discuss the role of LHRH Agonists and • antagonists as well as anti-androgens	SGD	1hr	MCQS

	Pharmacology	Oral contraceptive pills	• Describe the types, mechanism of action and physiological effects of Estrogens and Progesterone containing oral contraceptive pills	Lecture	1hr	MCQS
	Community medicines	Sexually transmitted diseases	• Describe various types of STDS • Describe the guidelines for the prevention and management of STDs	Lecture	1hr	MCQS
	Gynecology and Obstetrics	Pelvis	• Describe different types of female pelvis • Describe different diameters of female pelvis.	Lecture	1hr	MCQS

	Gynecology and Obstetrics	Female and Male infertility	• Describe the causes and investigations of male and female infertility • Describe normal semen parameters	Lecture	1hr	MCQS
	PRIME	Models of leadership & management	• Compare different models of leadership and management	Lecture	1hr	MCQS

Assessment Plan

	Endocrine I	**Reproduction I**	**Block total MCQS**
Gross anatomy	1	12	13
Embryology	2	7	9
Histology	5	6	11
Physiology	34	14	48
Biochemistry	20	6	26
Community medicine	1	2	3
Forensic	0	1	1
Medicine	4	0	
Prime	3	0	3
Pharmacology	2	0	2
	72	48	120

OSPE Blue print

Subject	Endocrine module	Viva station	Reproduction module	Viva station	Total OSPE station
Gross anatomy	0	1	2	1	10
Histology	3		3		
Embryology	0		0		
Physiology	0	1	1	1	3
Biochemistry	3	1	0	1	5
Total	3	3	6	3	12+6=18 (viva)

Internal Assessment:

Sr. No.	Criteria	Numbers
Theory:		
1.	Attendance (>90%=3,80-89%=2,70-79%=1,<70%=0)	**3**
2.	Creative work/assignments/Task	**1**
3.	Continuous Assessment throughout block	**2**
4.	Block examination theory	**3**
5.	Pre prof Examination of block	**4**
	Total	**13**
Sr. No.	Criteria	**Numbers**
OSPE:		
1.	Attendance (>90%=3,80-89%=2,70-79%=1,<70%=0)	**3**
2.	Log Book	**3**
3.	Discipline, Responsibility and team work	**1**
4.	Block examination OSPE	**3**
	Total	**10**