



الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
يُونُسُ بَرَسِيْتِي اِسْلَامًا اِنْتَارَا اِبْحْسَابًا مَلِيْسِيَا
Garden of Knowledge and Virtue

DEPARTMENT OF BASIC MEDICAL SCIENCES AND
DEPARTMENT OF PATHOLOGY AND LABORATORY MEDICINE
KULLIYAH OF MEDICINE

STUDENT STUDY GUIDE
PHASE 1, YEAR 2 BLOCK 3, SESSION 2022/2023

COURSE CODE:
MBBS 2310

DATE OF BLOCK: 13/03/2023- 28/05/2023



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1. KULLIYAH OF MEDICINE

1.1 VISION

Kulliyyah of Medicine aims to become a leading centre of educational excellence which seeks to nurture the dynamic and progressive role of physicians for the ummah.

1.2 MISSION

Toward actualizing the Kulliyyah's vision, our missions are:

1. To acquire and propagate the medical knowledge and skill in the spirit of tauhid (faith).
2. To nurture balance staff and students integrating the qualities of faith (*Iman*), knowledge (*'ilm*), and good character (*Akhlaq*).
3. To foster culture that instils commitment for sustainable development, life-long learning and a deep sense of social responsibility for all mankind.



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2. TEACHING AND LEARNING METHODS

- L : Lecture
PRAC : Practical
PBL : Problem Based Learning
CBL : Case Based Learning
FC : Flipped Classroom
TBL : Team Based Learning
DSL : Directed Self Learning
SEM : Seminar

3. ASSESSMENT

- Minitest (CONASS)
End of Block examination (EBE)

4. LOCATION

Lecture Hall 2	LH2
Centralised Teaching Laboratory 1	CTL1
Centralised Teaching Laboratory 2	CTL2
Dissection Hall	DH
Seminar Room 1	SR1
Seminar Room 2	SR2
Seminar Room 3	SR3
Seminar Room 4	SR4
Seminar Room 5	SR5
Seminar Room 6	SR6
Tutorial Room 1	TR1
Tutorial Room 2	TR2
Tutorial Room 3	TR3
Tutorial Room 4	TR4
Tutorial Room 5	TR5
Tutorial Room 6	TR6
Clinical Skill Lab	CSL



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13. COURSE CODE : MBBS 2310

Course Title : The Endocrine, Reproductive and Urinary Systems
Coordinator : Dr Wan Muhamad Salahudin Wan Salleh
Hp number : 0199097650

13.1 CONTENT SYNOPSIS

The Endocrine, Reproductive and Urinary Systems course is designed to provide a comprehensive overview of the basic principles and the dysfunction and diseased states relating to the endocrine system, reproductive system and renal system. Information will be presented in an integrated approach incorporating various disciplines of medicine (anatomy, physiology, biochemistry, pathology, microbiology, pathology, pharmacology, psychology, surgery, internal medicine, obstetrics and gynaecology). Islamic Inputs on 'Biological Miracle' is also covered.

The course emphasizes on active participation of lecturers and students. The lecturer will be the resource person and facilitator in executing the teaching-learning activities. Students' attendance and active participation throughout the block is compulsory.

13.2 OBJECTIVE / INTENDED LEARNING OUTCOME

1. Describe the gross anatomy, histology and embryology of endocrine, reproductive and renal systems.
2. Describe the physiology and biochemistry of endocrine, reproductive and renal systems.
3. Demonstrate basic laboratory skills related to endocrine, reproductive and renal systems.
4. List the causes and explain the pathophysiologic mechanisms of the common endocrine, reproductive and renal disorders.
5. Outline the laboratory tests and interpret the findings of the tests related to the disorders.
6. Discuss the pharmacokinetic and pharmacological aspects of drugs relevant to the endocrine, reproductive and urinary systems.
7. Discuss the Islamic aspects of the 'Biological Miracle'.



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13.3 LEARNING ACTIVITIES

1. Lecture
2. Practical
3. Team-based learning (TBL)
4. Flipped Classroom (FC)
5. Problem based learning (PBL)
6. Case based learning (CBL)
7. Directed self-learning
8. Seminar

13.4 ASSESSMENT METHODS

1. Minitest
 - a. Multiple True False
 - b. One Best Answer
 - c. Data Picture Test
2. Problem based learning Rubric
3. End of Block Examination
 - a. Multiple True False
 - b. One Best Answer
 - c. Modified Essay Question
 - d. Short Notes
 - e. Objectively Structured Practical Examination
4. Seminar Rubric



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14. OUTLINE OF COURSE CONTENT

14.1 BASIC MEDICAL SCIENCES

14.1.1 ANATOMY

ANATOMY		
No.	Topics	Learning Outcomes
1.	Anatomy of pituitary gland: gross and embryology	LO1: Describe the structure of the pituitary gland
		LO2: Describe the relation of the pituitary gland
		LO3: Describe the blood supply of the pituitary gland
		LO4: Explain the development of the pituitary gland
		LO5: Relate the structure to the development of the pituitary gland
		LO6: Apply relevant anatomical knowledge to diseases of the pituitary gland
2.	Anatomy of thyroid gland: gross and embryology	LO1: Describe the surface anatomy, location and structure of the thyroid gland
		LO2: Describe relations of the thyroid gland to adjacent structures
		LO3: Describe blood supply, lymphatic drainage and innervation of the thyroid gland
		LO4: Describe the development of thyroid gland and relate to congenital anomalies
		LO5: Describe the gross anatomy and development of parathyroid glands
		LO6: Apply relevant anatomical knowledge to thyroid diseases
3.	Histology of endocrine gland I	LO1: Describe the general concepts of glandular epithelium
		LO2: Differentiate the microscopic appearance of pars distalis, pars intermedia and pars nervosa
		LO3: Describe the morphology of cells in pars distalis, pars intermedia and pars nervosa
		LO4: Describe the microscopic appearance of thyroid gland
		LO5: Differentiate the morphology of follicular cell and parafollicular cells
4.	Histology of endocrine gland II	LO1: Describe the microscopic appearance of parathyroid gland

		LO2: Differentiate the morphology of chief cell and oxyphil cell
		LO3: List three zones of adrenal cortex
		LO4: Differentiate the microscopic appearance of three zones of adrenal cortex
		LO5: Describe the microscopic appearance of adrenal medulla
		LO6: Relate the structure to the functions of adrenal cortex and medulla
5.	Anatomy of adrenal gland: gross and embryology	LO1: Differentiate the structure of right and left adrenal glands
		LO2: Describe the relations of right and left adrenal glands
		LO3: Describe blood supply, lymphatic drainage and innervation of adrenal glands
		LO4: Explain the development of the adrenal glands
		LO5: Relate the structure to the development of the adrenal gland
		LO6: Apply anatomical knowledge to diseases of the adrenal gland
6.	Anatomy of pelvis and pelvic wall	LO1: Describe bony pelvis, important landmarks & ligaments
		LO2: Differentiate between male and female pelvis
		LO3: Describe the pelvic cavity and pelvic walls
		LO4: Describe the overview of blood supply to pelvic wall and organs
		LO5: Describe the overview of lymphatic drainage of pelvic wall and organs
		LO6: Describe the innervation of the pelvic walls and organs
7.	Anatomy of pelvic floor and perineum	LO1: Describe the structures that form the pelvic diaphragm
		LO2: Describe the perineum, perineal membrane and urogenital diaphragm
		LO3: Differentiate the urogenital triangle and anal triangle
		LO4: Describe the ischiorectal fossa
		LO5: Differentiate superficial and deep perineal pouches

		LO6: Describe the blood supply and innervation of perineum
8.	Anatomy of male genital system I	LO1: Describe the anatomy of the scrotum, testis and epididymis.
		LO2: Describe the structure and course of the spermatic cord and ductus (vas) deferens.
		LO3: Describe the origin, course and relations of the testicular arteries and veins
9.	Anatomy of male genital system II	LO1: Describe the anatomy and relations of the prostate gland and seminal vesicles.
		LO2: Describe the cavernous tissue of the testis, the pudendal nerve and innervation involve in erection and ejaculation.
		LO3: Describe the lymphatic drainage of the male reproductive organs.
10.	Anatomy of female genital system I	LO1: Recognize the organs and structures that made up the internal reproductive system in female.
		LO2: Define the anatomical position of the ovary, uterine tubes, uterus and vagina.
		LO3: Identify the surfaces of the structures.
		LO4: Describe the gross morphology of the structures and the surrounding relations.
		LO5: Describe the blood, nerve and lymphatic supply of the structures.
		LO6: Relate the clinical importance of the structures.
11.	Anatomy of female genital system II	LO1: Recognize the organs and structures that made up the external reproductive system in female.
		LO2: Define the anatomical position of the mons pubis, labia majora and minora, clitoris and vestibular glands.
		LO3: Identify the surfaces of the structures.
		LO4: Describe the gross morphology of the structures and the surrounding relations.
		LO5: Describe the blood, nerve and lymphatic supply of the structures.
		LO6: Relate the clinical importance of the structures.
12.	Histology of male genital system I	LO1: Describe the general architecture of the

		testis
		LO2: Describe the histology of seminiferous tubule and recognize the germinal epithelium, Sertoli cells and Leydig cells
		LO3: Describe the histology of ductus epididymis and ductus deferens.
13.	Histology of male genital system II	LO1: Describe the histological organization of the prostate gland, and its clinical correlation.
		LO2: Describe the histology of the seminal vesicles and bulbourethral gland and their contribution to the formation of semen.
		LO3: Describe the histological organization of the penis and its role in erection.
14.	Anatomy of kidney and ureter	LO1: Describe the anatomy of urinary bladder, its external and internal features
		LO2: Differentiate the relation of urinary bladder to other structures in male and female.
		LO3: Describe the ligaments of the bladder
		LO4: Describe the arterial supply, venous drainage, lymphatic drainage and innervation of urinary bladder.
15.	Histology of female genital system I	LO1: Describe the gross anatomy of the ovary.
		LO2: Identify the cortex and medulla layers of ovary.
		LO3: Identify the different stages of follicles in ovary.
		LO4: Relate the stages of follicles with the menstrual cycle.
16.	Histology of female genital system II	LO1: Describe the gross anatomy of the uterus, cervix, vagina and mammary glands.
		LO2: Identify the different layers of all the structures.
		LO3: Identify the cells present in each layer of the structures.
		LO4: Compare the difference between active and inactive mammary glands.
17.	Anatomy of bladder and urethra	LO1: Describe the anatomy of the bladder
		LO2: Describe the anatomy of different parts of male urethra and female urethra
18.	Development of the urogenital system I	LO1: Describe the urogenital ridge
		LO2: Describe the differentiation of urogenital

		ridge to genital and mesonephric ridges
		LO3: Describe the development of the kidneys and ureters
		LO4: Differentiate the formation of pronephros, mesonephros and metanephros
		LO5: Describe the fate of mesonephric duct in male
		LO6: Describe the anomalies of the kidneys and ureters
19.	Development of the urogenital system II	LO1: Describe the development of the bladder and urethra
		LO2: List the anomalies of the urinary bladder and urethra
		LO3: Differentiate urogenital embryonic structures and their derivatives in adult male and female
20.	Development of the urogenital system III	LO1: Describe the indifferent stage in the development of the genital duct and gonads
		LO2: Compare indifferent stage with the Quranic verses and the Prophet sayings Hadiths
		LO3: Correlate the sex determination to the Quranic verses
		LO4: Describe the development of the genital duct in male and female and their derivatives
		LO5: Describe the development of testes and ovary
		LO6: Describe the anomalies of the female genital ducts and testes
21.	Histology of urinary system I	LO1: Describe the histology of the kidney, nephron, renal corpuscle, filtration unit, juxtaglomerular apparatus and tubules.
		LO2: Describe the histological differences between tubules of the kidney
22.	Histology of urinary system II	LO1: Describe the histology of urinary bladder
		LO4: Describe the histology of urinary bladder

14.1.2 BIOCHEMISTRY

BIOCHEMISTRY		
No.	Topics	Learning Outcomes
1.	General Principles of Hormone Biosynthesis and Metabolism	LO1: Define hormone
		LO2: Describe general principles of hormone biosynthesis
		LO3: Describe general principles of metabolism and degradation of various hormones
2.	Hormone Action	LO1: Describe the classification of hormones
		LO2: Describe the mechanism of hormonal action
3.	Biosynthesis & Metabolism of Thyroid Hormones	LO1: Describe the biosynthesis of thyroid hormones
		LO2: Describe the control and regulation of thyroid hormone secretion
		LO3: Describe thyroid hormone mechanism of action
		LO4: Describe the metabolism of thyroid hormone
4.	Thyroid Function Test	LO1: Relate various components and interpretation of thyroid function tests
		LO2: List additional tests that are useful in the diagnosis of thyroid disorders
5.	Biosynthesis & Metabolism of Adrenal Cortex Hormones	LO1: Describe the biosynthesis, metabolism and regulation of adrenocortical hormones (Mineralocorticoids, Glucocorticoids and sex corticoids)
		LO2: Describe the biosynthesis and metabolism of adrenomedullary hormones (Epinephrine and Norepinephrine)
		LO3: Relate the clinical importance of adrenal hormones disorders
6.	Metabolism of Calcium	LO1: Describe the physiological roles and normal homeostasis of calcium
		LO2: Describe factors that regulate plasma calcium with regard to the action of parathyroid hormone, vitamin D and calcitonin
		LO3: Relate the disorders of calcium homeostasis with regard to hypocalcemia and hypercalcemia
7.	Sex Hormone Metabolism	LO1: Describe the biosynthesis, metabolism of Androgens and its regulation

		LO2: Describe the biosynthesis, metabolism of estrogens and progesterone and its regulation
8.	Metabolism of Phosphate	LO1: Describe the biological roles and normal homeostasis of phosphate
		LO2: Relate the disorders of phosphate homeostasis with regard to hyperphosphatemia and hypophosphatemia.
9.	Insulin & Glucagon	LO1: Describe the structure and biosynthesis of insulin and glucagon
		LO2: Explain the regulation of insulin and glucagon secretion
		LO3: Describe insulin and glucagon mechanism of action and their metabolic effects
		LO4: Relate the role of insulin and glucagon in blood glucose homeostasis
10.	Investigation in Diabetes Mellitus	LO1: Interpret various laboratory investigation involved in diagnosis and monitoring of DM
11.	Investigation of Endocrine Disorder	LO1: Describe the feedback control in the endocrine system
		LO2: Describe the principle and interpret the various laboratory investigation involved in the diagnosis of endocrine disorders
12.	Biochemical Techniques in Hormone Assay	LO2: Relate the advantage/disadvantage and applications of hormonal assays

14.1.3 PHYSIOLOGY

PHYSIOLOGY		
No.	Topics	Learning Outcomes
1.	Overview of endocrine system	LO1: Describe the terms hormone, endocrine, exocrine gland, paracrine, autocrine, and intracrine.
		LO2: Understand the physiological functions of all hormones in endocrine gland system throughout the body
		LO3: Understand the types of hormones and its mechanism of action
		LO4: Understand and able to contrast between the positive feedback loop and negative feedback loop mechanism
2.	Pituitary Hormones	LO1: Illustrate the functional anatomy of the pituitary
		LO2: Explain the functions of the anterior and posterior pituitary.
		LO3: Describe the hypothalamus-pituitary axis (HPA)
		LO4: Describe the endocrine control of growth
		LO5: List the clinical application of pituitary hormones insufficiency
3.	Function of Thyroid & Parathyroid Hormones	LO1: Describe the functional anatomy of the thyroid and parathyroid gland.
		LO2: Explain the functions/effects/actions of thyroid and parathyroid hormones.
		LO3: Discuss the regulation of hemostasis of thyroid and parathyroid hormones.
		LO4: List and explain the functional of calcium.
		LO5: Discuss calcium homeostasis.
4.	Function of Adrenal Gland	LO1: To describe the adrenal gland functional anatomy.
		LO2: To explain the regulation of adrenocortical hormones production
		LO3: To describe the action of adrenocortical hormones.
		LO4: To explain the regulation of adrenal medulla catecholamines production.
		LO5: To describe the action of catecholamines.

		LO6: To describe clinical features of the adrenal gland disorders.
5.	Endocrine Function of pancreas	LO1: Describe the functions of insulin.
		LO2: Describe the functions of glucagon.
		LO3: Discuss the functions of other pancreatic hormones
		LO4: Describe the regulation of blood glucose in the body.
		LO5: Describe insulin resistance and insulin insufficiency to our body.
6.	Physiology of Male Reproductive System	LO1: To describe the functional structure of the male reproductive system.
		LO2: To describe spermatogenesis.
		LO3: To describe storage of sperm, ejaculation, and function of accessory glands.
		LO4: To describe the synthesis and secretion of testosterone.
		LO5: To explain the regulation of male reproductive function.
		LO6: To describe the actions of androgen.
7.	Physiology of Female Reproductive System	LO1: To describe the functional structure of the female reproductive system.
		LO2: To describe the principles events of oogenesis
		LO3: To describe the synthesis and secretion of estrogen & progesterone.
		LO4: To explain the regulation of female reproductive function.
		LO5: To describe the actions of estrogen & progesterone.
8.	Physiology of Pregnancy	LO1: Describe principal events of fertilization, implantation and early physiological changes in pregnancy.
		LO2: Explain hormonal changes during pregnancy.
		LO3: Explain maternal systemic physiological changes during pregnancy.
9.	Renal System DSL	LO1: Describe the basic anatomy of the renal system
		LO2: Describe the various physiological processes involved in renal function in order to maintain

		fluid and electrolyte balance. LO3: Describe the hormonal regulation of renal function.
10.	Acid Base Balance DSL	LO1: Describe the defense against pH changes including the buffer systems LO2: Describe the compensatory response by respiratory and renal system LO3: Interpret the arterial blood gas reading LO4: Analyze the different types of acid-base balance disturbances and its possible causes

14.1.4 PHARMACOLOGY

PHARMACOLOGY		
No.	Topics	Learning Outcomes
1.	Anti-Thyroid drugs	LO1: Define common terminology in Antithyroid drugs.
		LO2: Identify and classify antithyroid drugs
		LO3: Discuss Side effects and drug interactions of different Antithyroid drugs
		LO4: Describe Antithyroid
		LO5: Explain the possible drug-drug interaction of common Antithyroid drugs
2.	Insulin Preparations	LO1: Define common terminology in Insulin preparations.
		LO2: Identify and classify insulin preparations
		LO3: Discuss Side effects and drug interactions of different Insulin preparations
		LO4: Discuss Prescription art of Insulin preparations
		LO5 - Explain the possible drug-drug interaction of common Insulin preparations
3.	Oral Hypoglycemics	LO1: Define common terminology in OHG drugs.
		LO2: Identify and classify OHG drugs
		LO3: Discuss Side effects and drug interactions of different OHG drugs
		LO4: Discuss OHG Drugs
		LO5: Explain the possible drug-drug interaction of common OHG drugs
4.	Glucocorticoids & Mineralocorticoids 1	LO1: Summarize the HPA axis and its regulation.
		LO2: Discuss the pharmacological actions, therapeutic uses and diagnostic uses of ACTH.
		LO3: Describe the pharmacokinetics and pharmacodynamics of glucocorticoids.
		LO4: List the pharmacological actions of glucocorticoids and mineralocorticoids.
5.	Glucocorticoids & Mineralocorticoids 2	LO1: List and describe the diagnostic and therapeutic uses of corticosteroids.
		LO2: Explain the effects of abrupt withdrawal of corticosteroid therapy.
		LO3: Explain the effects of prolonged corticosteroids use.

		LO4: Understand the principles of corticosteroids therapy.
		LO5: List inhibitors of adrenocortical steroids.
		LO6: List mineralocorticoid antagonists.
6.	Sex Hormones	LO1: Define common terminology related to sex hormones.
		LO2: Identify and classify sex hormones agonists and antagonists
		LO3: Discuss Side effects and drug interactions of different sex hormones agonists and antagonists
		LO4: Describe sex hormones agonists and antagonists
		LO5: Explain the possible drug-drug interaction of common sex hormones related drugs
7.	Drugs Acting on the Uterus	LO1: Define common terminology related to drugs acting on uterus.
		LO2: Summarize the effects of abrupt withdrawal of corticosteroid therapy.
		LO3: Discuss Side effects and drug interactions of different drugs acting on uterus
		LO4: Discuss Prescription art of drugs acting on uterus
		LO5: Explain the possible drug-drug interaction of common drugs acting on uterus
8.	Oral Contraceptives	LO1: Define common terminology in Oral contraceptive drugs.
		LO2: Identify and classify oral contraceptive drugs
		LO3: Discuss Side effects and drug interactions of different oral contraceptive drugs
		LO4: Discuss oral contraceptive
		LO5: Explain the possible drug-drug interaction of common oral contraceptive drugs
9.	Nephrotoxic Drugs	LO1: Define common terminology related to nephrotoxic drugs
		LO2: Identify and classify nephrotoxic drugs
		LO3: Discuss Side effects and drug interactions of different Antirheumatic drugs
		LO4: Describe Prescription art of nephrotoxic drugs to minimize nephrotoxicity
		LO5: How to avoid nephrotoxic drugs effects

10.	Diuretics I	LO1: Define diuretics, natriuretics and aquaretics
		LO2: Classify diuretic drugs
		LO3: Identify the site of action of each class of diuretics in the nephron
		LO4: Describe the pharmacology of carbonic anhydrase inhibitors and osmotic diuretics
		LO5: List the clinical uses, adverse effects, contraindications of carbonic anhydrase and osmotic diuretics
11.	Diuretics II	LO1: Describe the pharmacology of loop diuretics, thiazides, potassium sparing diuretics
		LO2: List the clinical uses, adverse effects, contraindications of loop diuretics, thiazides, potassium sparing diuretics
12.	Analogues of Pituitary Hormones & Drugs that Acts on Pituitary	LO1: Explain the hypothamo-pituitary system and its regulation.
		LO2: List and describe the pharmacology of gonadotropin-releasing hormone and its analogues as well as antagonists
		LO3: List and describe the pharmacology of the gonadotropins: FSH and LH and their analogues
		LO4: List and describe the pharmacology of prolactin and dopamine agonist
		LO5: Describe posterior pituitary hormone: Oxytocin and vasopressin

14.1.5 MICROBIOLOGY

MICROBIOLOGY		
No.	Topics	Learning Outcomes
1.	Gynaecological Infections I	LO1: Define gynecological and obstetrical infections and its epidemiology
		LO2: Describe etiology and pathogenesis of pelvic inflammatory disease
2.	Gynaecological Infections II	LO1: Describe other genital infections
		LO2: Describe acute and chronic mastitis
		LO3: Understand pathophysiology and immunopathogenesis of preterm delivery caused by obstetrical infections
3.	Pregnancy & Perinatal Infection	LO1: Describe the pathogenesis, diagnosis, treatment, prevention and complication of maternal toxoplasmosis
		LO2: Describe the pathogenesis, diagnosis, treatment and complication of maternal syphilis
		LO3: Describe the pathogenesis, diagnosis, treatment, prevention and complication of maternal rubella
		LO4: Describe the pathogenesis, diagnosis, treatment and complication of maternal CMV infection
		LO5: Describe the pathogenesis, diagnosis, treatment and complication of maternal HSV infection
		LO6: Describe other maternal infections associated with neonatal morbidity
4.	STD	LO1: Define STD
		LO2: Identify causative organisms
		LO3: Interpret the manifestation of STI caused by particular organism
		LO4: Explain the differential diagnosis of STD
5.	Urological infection	LO1: Define upper and lower Urinary tract infections (UTIs)
		LO2: Describe signs and symptoms of bacterial cystitis and bacterial prostatitis
		LO3: Define asymptomatic bacteriuria
		LO4: List common bacteria causing UTI
		LO5: Describe laboratory investigations and

		treatment and UTIs
		LO6: Directed Self learning: Bacterial orchitis and epididymis

14.1.6 PARASITOLOGY

PARASITOLOGY		
No.	Topics	Learning Outcomes
1.	Trichomoniasis	LO1: Describe the parasite biology
		LO2: State the epidemiology of Trichomoniasis
		LO3: Describe the life cycle & transmission of T. vaginalis
		LO4: Discuss the pathology & clinical manifestations of Trichomoniasis
		LO5: Discuss the laboratory diagnosis of Trichomoniasis
		LO6: State the treatment & prevention of Trichomoniasis
2.	Toxoplasmosis	LO1: Discuss the pathophysiology of the signs & symptoms
		LO2: Relate the lifecycle, signs & symptoms with clinical investigations
		LO3: Discuss the treatment & prevention

14.2 PATHOLOGY

PATHOLOGY		
No.	Topics	Learning Outcomes
1.	Tumors of Male Reproductive System	LO1: Define and state the classification of tumours of urinary system.
		LO2: Define and state the classification of tumours of male genital organs.
		LO3: Describe the epidemiology of tumours of urinary system.
		LO4: Describe the epidemiology of tumours of male genital organs.
		LO5: Describe the clinical manifestation and pathological features of tumours of urinary system: renal cell carcinoma and urothelial carcinoma.
		LO6: Describe the clinical manifestation and pathological features of tumours of male genital organs; benign prostate hyperplasia, prostate carcinoma, testicular tumours.
		LO7: Describe the investigation of tumours of urinary system and male genital organs.
2.	Tumours of Female Reproductive I	LO1: Define the benign and malignant tumours of the cervix.
		LO2: State the risk factors and epidemiology of cervical cancer.
		LO3: State the screening modalities for cervical cancer.
		LO4: Describe the pathogenesis and pathological features of cervical cancer.
		LO5: Explain the clinical features of cervical cancer.
		LO6: State diagnostic investigations and principle of management of cervical cancer.
		LO7: Define and state the different types of benign and malignant tumours of the uterus.
		LO8: Describe the general clinical features of uterine neoplasm.
		LO9: Describe the pathology of leiomyoma.
3.	Tumours of Female Reproductive II	LO1: Define ovarian tumours.
		LO2: State the classification of ovarian tumours:

		<p>surface epithelial tumours, germ cell tumours, sex cord-stromal tumours.</p> <p>LO3: State the clinical manifestation of ovarian tumours.</p> <p>LO4: List the diagnostic investigations of ovarian tumours (emphasis on microscopic findings).</p> <p>LO5: Define and state the different types of gestational trophoblastic diseases (GTD).</p> <p>LO6: Describe the pathology of GTD.</p> <p>LO7: Describe the clinical manifestation of GTD</p> <p>LO8: List the investigations of GTD.</p>
4.	Pathology of Mammary Gland I	<p>LO1: Define disorders of breast development.</p> <p>LO2: Identify congenital anomaly of the breast.</p> <p>LO3: Define breast disease.</p> <p>LO4: Describe the clinical presentation of breast diseases.</p> <p>LO5: Describe the screening and diagnostic modalities of breast diseases.</p> <p>LO6: Describe inflammatory disorders of the breast, e.g., acute mastitis, etc.</p>
5.	Pathology of Mammary Gland II	<p>LO1: Define and state benign epithelial lesion of the breast.</p> <p>LO2: Describe benign breast tumours, e.g., fibroadenoma.</p> <p>LO3: Define and state the types of breast cancer.</p> <p>LO4: State the epidemiology of breast cancer.</p> <p>LO5: Describe the etiology and pathogenesis of breast cancer.</p> <p>LO6: Explain the clinical features of breast cancer.</p> <p>LO7: Explain the investigation findings of breast cancer (must include the microscopic findings).</p> <p>LO8: Describe staging and prognostication of breast cancer.</p> <p>LO9: Describe the principle of management of breast cancer.</p>
6.	Pathology of Kidney I	<p>LO1: Identify various pathology of the kidney.</p> <p>LO2: Identify inflammatory disorder of the kidneys</p> <p>LO3: Define pyelonephritis.</p> <p>LO4: State the causes of pyelonephritis.</p>

		LO5: Describe the pathogenesis and pathological features of pyelonephritis
		LO6: Explain the clinical features of pyelonephritis.
		LO7: Define glomerulonephritis.
		LO8: State the classification of glomerulonephritis.
		LO9: State the causes of glomerulonephritis.
		LO10: Explain the clinical features and pathology of glomerulonephritis, e.g., post-infectious GN, crescentic GN, and proliferative lupus GN.
		LO11: Describe the laboratory investigations of glomerulonephritis.
7.	Pathology of Kidney II	LO1: Define nephrotic syndrome
		LO2: State the causes and types of nephrotic syndrome.
		LO3: Explain the clinical features and pathology of nephrotic syndrome, e.g., minimal changes disease and membranous nephropathy.
		LO4: Describe the laboratory investigations of nephrotic syndrome.
		LO5: Describe renal pathology in hypertension.
		LO6: Describe renal pathology in diabetes mellitus.
8.	Diabetes Mellitus	LO1: Define diabetes mellitus (DM).
		LO2: Describe the classification of DM.
		LO3: Describe the pathogenesis and pathological features of DM.
		LO4: Explain the clinical features of DM.
		LO5: Describe the long-term diabetic complications.
		LO6: Explain the mechanisms of long-term diabetic complications.
		LO7: State the principle of management of DM.

14.3 CLINICAL

14.3.1 INTERNAL MEDICINE

INTERNAL MEDICINE		
	TOPIC	LEARNING OUTCOME
1.	Thyroid Dysfunction I	LO1: Understand the basic physiology and functions of thyroid hormone LO2: Understand the clinical characteristics of hyperthyroidism
2.	Thyroid Dysfunction II	LO1: Understand the clinical characteristics of hypothyroidism LO2: Understand the indication for thyroidectomy and its related complications
3.	Adrenal Disease	LO1: Describe the functions of the adrenal glands and its relationship with the hypothalamo-pituitary-adrenal axis. LO2: Describe the major actions of the adrenal gland hormones and their clinical significance. LO3: Recognise the clinical presentations of common adrenal diseases. LO4: Describe relevant investigations related to the diagnosis of common adrenal diseases. LO5: Recognise the principles of management of common adrenal diseases.
4.	Male Hypogonadism and Disorder of Testes	LO1: Recall on anatomy of male reproductive system LO2: Recall on physiology of male reproductive system LO3: Apply the knowledge on the anatomy of male reproductive system in clinical evaluation of patients with male hypogonadism and disorder of testes LO4: Apply the knowledge on the physiology of male reproductive system in clinical evaluation of patients with male hypogonadism and disorder of testes LO5: Apply the knowledge on the physiology of male reproductive system in laboratory investigations of patients with male hypogonadism and disorder of testes LO6: Analyze different causes of male hypogonadism and disorder of testes LO7: Evaluate the male hypogonadism and disorder of testes

		LO8: Create management plan for patients with hypogonadism and disorder of testes
5.	Renal Failure	LO1: Understand the basic normal renal function LO2: Understand the pathophysiology, symptoms, signs and causes of renal failure LO3: Understand the classification, types and complications of renal failure LO4: Know the ways of investigations in renal failure LO5: Understand ways of treating renal failure

14.3.2 ORTHOPAEDIC

ORTHOPAEDIC		
No.	Topics	Learning Outcomes
1.	Diabetic Limb Problems	LO1: Describe the clinical features of diabetic limb LO2: Describe the pathophysiology of diabetic limb LO3: Outline the management of diabetic limb

14.3.3 OBSTETRICS AND GYNAECOLOGY

OBSTETRICS AND GYNAECOLOGY		
No.	Topics	Learning Outcomes
1.	Disorders of Menstrual Cycle	<p>LO1: Define abnormal uterine bleeding and describe its causes, investigation, and general principle of management</p> <p>LO2: Define and classify amenorrhoea and describe its causes, investigation and general principle of management</p> <p>LO3: Define and classify dysmenorrhoea and describe its causes, investigation and general principle of management.</p> <p>LO4: Classify ovulatory disorders and describe its causes, investigation and general principle of management</p> <p>LO5: Define premenstrual syndrome and describe its diagnostic criteria and general principle of management</p>
2.	Male and Female Pseudo Hermaphroditism	<p>LO1: Define pseudohermaphroditism.</p> <p>LO2: Describe the causes, diagnosis, complications and general principle of management of male pseudohermaphroditism</p> <p>LO3: Describe the causes, diagnosis, complications and general principle of management of female pseudohermaphroditism.</p> <p>LO4: Discuss the health care delivery in culturally and emotionally sensitive cases of pseudohermaphroditism</p>
3.	Female Gonadal Dysfunction	<p>LO1: Describe the physiology of normal puberty and menstrual cycle</p> <p>LO2: To understand the causes of female gonadal dysfunction which include delayed puberty, amenorrhoea and primary ovarian insufficiency</p> <p>LO3: To describe the effect of female gonadal dysfunction</p> <p>LO4: To relate its clinical signs and symptoms with the diagnosis</p>

14.3.4 SURGERY

SURGERY		
No.	Topics	Learning Outcomes
1.	Urinary Tract Infection	LO1: Discuss on urinary tract infection diseases including definition, pathophysiology, clinical presentation investigations
2.	Urolithiasis	LO1: Discuss on diseases related with urolithiasis including definition, pathophysiology, clinical presentation investigations
3.	Urological Malignancy	LO1: Discuss on malignant diseases of urinary system including definition, pathophysiology, clinical presentation investigations
4.	Prostate Disorder	LO1: Discuss on benign and malignant diseases of prostate including definition, pathophysiology, clinical presentation investigations

14.3.5 PSYCHIATRY

PSYCHIATRY		
No.	Topics	Learning Outcomes
1.	Female Reproductive organ and Women's Mental Health	LO1: Identify common psychological issues among women of reproductive age. LO2: Compare the differences between abnormal (e.g., post-partum depression) and normal experience (e.g., baby blues phenomenon) among women of reproductive age. LO3: Relate the knowledge on basic sciences (e.g., female hypothalamus-pituitary axis) with the clinical manifestation of illness among women.
2.	Problem Associated with Endocrine Disorders	LO1: Describe common endocrine disorders with its associated psychological disturbances LO2: Recognise the common symptoms in endocrine disorders mimicking psychiatric disorders
3.	Sexual Dysfunction	LO1: Describe normal and abnormal sexual cycle LO2: Identify types of sexual disorders according to DSM-5 LO3: Explain the signs and symptoms of common sexual disorders based on DSM-5 diagnostic criteria

14.4 ISLAMIC INPUT IN MEDICAL PRACTICE (IIMP)

ISLAMIC INPUT IN MEDICAL PRACTICE (IIMP)		
No.	Topics	Learning Outcomes
1.	Control and homeostasis	LO1: Describe homeostasis and scope of equilibrium
		LO2: Understand the importance of control and homeostasis
		LO3: Reflect the value of control and homeostasis in Human Life
2.	Interaction with environment	LO1: Describe the concept of environment and Islamic view
		LO2: Discuss with example on physical, chemical, biological and microbiological environment
		LO3: Discuss the relevant Hadith with regards to environment
3.	Epidemiology and statistics	LO1: Understand basic principles of statistics
		LO2: Define epidemiology and its significance
		LO3: Value epidemiology and statistics from Islamic view
4.	Perfection and optimality in human body	LO1: Explain perfection in all of Allah's creation
		LO2: Describe the process of perfection of creation.
		LO3: Recognize the purpose in all creation
		LO4: Correlate the perfection & optimality in basic and other branches of medical sciences

15. OUTLINE COURSE CONTENT (PRACTICAL / PBL / CSL / SEMINAR)

DISCIPLINE	LECTURER	TITLE
Anatomy	All lecturers	Practical 1: Reproductive and urogenital system
	All lecturers	Practical 2: Endocrine system
	All lecturers	Practical 3: Male reproductive system
	All lecturers	Practical 4: Female reproductive system
	All lecturers	Practical 5: Urinary system
Biochemistry	All lecturers	Practical 1: Glucose estimation and oral glucose tolerance test (OGTT)
Pathology	All lecturers	Practical 1:
	All lecturers	Practical 2:
	All lecturers	Practical 3:

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