STUDY GUIDE
BLOCK 5
INTEGRATED MODULER SYSTEM
ACADEMIC SESSION. 2024
2nd YEAR MBBS

RAHBAR MEDICAL AND DENTAL COLLEGE
LAHORE

Table of Contents

BLOCK 5

Endocrinology & reproduction module 1

Modular Outcome:

- Explain Development, structure, hormones and regulation of pituitary gland, thyroid gland, parathyroid gland, endocrine pancreas, adrenal glands, testes and ovaries.
- Describe the etiology, pathophysiology, relevant clinical features and common investigations of disorders of these glands.
- Apply levels of prevention for common endocrinal public health issues in Pakistan.

  Elaborate events in normal pregnancy and principles of genetics.

NORMAL STRUCTURE			
THEORY			
CODE	**GROSS ANATOMY**	**TOTAL HOURS = 35**	
	SPECIFIC LEARNING OUTCOMES	**DISCIPLINE**	**TOPIC**
EnR-A-001	Describe the location, anatomy blood supply and functions of pituitary gland	Anatomy	Diencephalon (Endocrinology)
EnR-A-002	Describe the Thyroid, Parathyroid with their type, Relations, blood supply, and nerve supply.	Anatomy	Thyroid & Parathyroid gland
	Explain the anatomical basis for surgical removal of the glands of neck with special emphasis on the complications that can be encountered	Anatomy	
	Identify the Thyroid with their type, relations, blood supply, and nerve supply.	Anatomy	
EnR-A-003	Describe the structure, fascia, coverings, blood and nerve supply of testis	Anatomy	Testis
EnR-A-004	Describe the gross anatomical features and neuro-vasculature of epididymis and vas deferens, Seminal vesicles, Bulbourethral gland	Anatomy	Accessory Male organs
EnR-A-005	Describe the morphological features and neurovascular supply of prostate. Describe, Draw & Label Lobes of prostate gland Correlate the clinical manifestations of prostate with lobes and/or zones of prostate		Prostate
EnR-A-006	Describe the anatomical basis and manifestations of the following conditions: 1) Hydrocele of spermatic cord and/or testes 2) Hematocele of testes 3) Torsion of the spermatic cord 4) Varicocele Vestigial remnants of embryonic genital duct	Anatomy	Testis clinical conditions
	Describe the anatomical basis of vasectomy, &	Anatomy	

	metastasis of cancer of testis and scrotum		
EnR-A-007	Describe shape, relations blood supply & nerve supply of suprarenal gland	Anatomy	Supra-Renal Gland
	Explain the anatomical causes of Adrenal Abnormalities	Anatomy	
EnR-A-008	Define Bony Pelvis (Girdle) and describe the structures forming it.	Anatomy	Pelvic Girdle
	Describe the bones and salient anatomical features of Bony pelvis (girdle)	Anatomy	
EnR-A-009	Describe the type, articulations and mechanics of movements {axes and planes} of the following joints: 1) Sacro-Iliac 2) Pubic Symphysis 3) Lumbosacral 4) Sacrococcygeal	Anatomy	Sacroiliac-Joint
EnR-A-010	List the contents of True and False Pelvis	Anatomy	Bony Pelvis (Girdle)
	Tabulate the differences between male and female pelvis	Anatomy	
	Describe different types of pelvises	Anatomy	
	Describes different diameters of pelvis and their application in obstetric practice	Anatomy (Obs & Gynae)	
EnR-A-011	Describe the anatomical basis of pelvic fractures and their consequences	Anatomy	Pelvic Girdle
	Describe the topographical anatomy of pelvic walls and its components	Anatomy	
	Describe the mechanics of changes occurring in pelvic ligaments and joint mobility in late pregnancy	Anatomy (Obs & Gynae)	
EnR-A-012	Describe the topographical anatomy of pelvic floor.	Anatomy	Pelvic floor
	Describe origin, insertion, nerve supply and actions of muscle forming pelvic floor	Anatomy	
EnR-A-013	Tabulate the attachments, innervations and actions of muscles forming the pelvic walls and floor	Anatomy	Pelvic Muscles

EnR-A-014	Describes injury to pelvic floor during child birth and its complications	Anatomy (Obs & Gynae)	Pelvic Girdle
EnR-A-015	Describe the peritoneal reflections in the male and female pelvis	Anatomy	Peritoneum peritoneal cavity of pelvis
EnR-A-016	Describe the gross anatomical features of Sacrum	Anatomy	Sacrum
EnR-A-017	Describe the gross anatomical features of pelvic fascia	Anatomy	Pelvic Fascia
EnR-A-018	Describe the boundaries of pelvic outlet and inlet	Anatomy	Pelvic Outlet and inlet
	Enumerate the structures passing through the pelvic inlet and pelvic outlet	Anatomy	
EnR-A-019	Tabulate the differences in peritoneal reflections in male and female pelvis	Anatomy	Peritoneal Reflection in Pelvis
EnR-A-020	Describe the origin, course, branches and distribution of common iliac artery	Anatomy	Pelvic Vessels
	Describe the origin, course, branches and distribution of external and internal iliac arteries	Anatomy	
	Describe the origin, course, tributaries and area of drainage of pelvic veins	Anatomy	
EnR-A-021	Describe the location, afferents and efferent of pelvic lymph nodes	Anatomy	Pelvic Lymph Nodes
EnR-A-022	Tabulate the origin, course, distribution and anastomosis of arteries of the pelvis	Anatomy	Pelvic Vessels & Pelvic nerves
	Describe the origin, root value, course, relations, branches and distribution of Pelvic nerves	Anatomy	
	Describe the anatomical basis and clinical picture for ligation of internal iliac artery and collateral circulation in pelvis	Anatomy	
	Describe the clinical picture and anatomical basis for the injury to pelvic nerves	Anatomy	
	Give anatomical justification for pelvic nerve blocks	Anatomy	
EnR-A-023	Describe the morphological features of urethra (male and female)	Anatomy	Pelvis

	Tabulate the parts of the male urethra with their location and salient features	Anatomy	
	Describe the clinical picture and anatomical justification for Ureteric Caliculi, Cystocele, Suprapubic Cystotomy, Rupture of Bladder	Anatomy	
	Describe the clinical picture and anatomical justification for Hypertrophy of Prostate	Anatomy	
	Describe the gross anatomical features of Ovaries and Fallopian Tubes with their relations, blood supply, nerve supply and lymphatic drainage Describe related clinical conditions: 1) Positions of ovaries 2) Cysts of ovaries 3) Ectopic pregnancy 4) Tubal ligation 5) Salpingitis	Anatomy	
	Describe the gross anatomical features, parts, peritoneal ligaments, blood supply, nerve supply & lymphatic & clinical aspects of Uterus and Vagina Describe related clinical conditions 1. Prolapse of uterus 2. Vaginal trauma 3. culdocentesis	Anatomy	
	Describe, identify, justify and demonstrate the supports of uterus	Anatomy	
EnR-A-024	Describe the gross anatomical features of Boundaries & divisions of perineum	Anatomy	Perineum
	Draw and label the boundaries of perineum	Anatomy	
	List the contents of perineum	Anatomy	
	Tabulate the differences between the Male and female	Anatomy	

	perineum		
	Describe the attachments of the perineal membrane and list its relations	Anatomy	
	Discuss the formation of Superficial and Deep Perineal Pouches	Anatomy	
	List the contents of Superficial and Deep Perineal Spaces	Anatomy	
	Tabulate the attachments, actions and nerve supply of muscles of perineum	Anatomy	
	Describe the topographical anatomy and neuro-vasculature of Penis	Anatomy	
	Tabulate the muscles forming the perineal body with their attachments and nerve supply	Anatomy	
EnR-A-025	Describe the clinical presentation and anatomical justification for: 1) Hypospadias 2) Phimosis 3) Circumcision 4) Erectile Dysfunction 5) Internal Hernias 6) Suprapubic Cystotomy 7) Rupture Of Bladder 8) Rectal Examination 9) Disposition Of Uterus	Anatomy	Pelvis
CODE	**EMBRYOLOGY & POST-NATAL DEVELOPMENT**	**TOTAL HOURS = 14**	
	SPECIFIC LEARNING OUTCOMES	**DISCIPLINE**	**TOPIC**
EnR-A-026	Describe the contributing factors, histogenesis and sequence of events of the development of Thyroid gland	Anatomy	Development of Thyroid gland
	Explain the embryological basis of the Thyroglossal Cyst	Anatomy	
	Draw a concept map highlighting the development of thyroid gland	Anatomy	

EnR-A-027	Describe the development of para-thyroid glands	Anatomy	Development Of Parathyroid glands
	Draw a concept map highlighting the development of para-thyroid gland	Anatomy	
EnR-A-028	Anatomically justify the clinical presentation of: 1. Ectopic Parathyroid 2. Aberrant Thyroid	Anatomy	Development of Thyroid, Parathyroid
EnR-A-029	Describe the development of pituitary gland Describe the embryological basis for the congenital anomalies of pituitary development	Anatomy	Development of Pituitary Gland
EnR-A-030	Describe the contributing factors, histogenesis and the development of adrenal gland	Anatomy	Development Of Adrenal Gland
	Draw a concept map for the development of adrenal gland	Anatomy	
	Describe the embryological basis for the congenital anomalies of adrenal development	Anatomy	
EnR-A-031	Identify the stages in the development of the adrenal gland	Anatomy	Adrenal Gland
EnR-A-032	Describe the indifferent gonads	Anatomy	Development of Reproductive system
	List and describe the Factors influencing the differentiation of gonads		
	Evaluate the role of the factors influencing Sex determination and differentiation		
	Describe the Development and descent of testis	Anatomy	
EnR-A-033	Describe the embryological basis and locations of undescended testes	Anatomy	Testis
EnR-A-034	Draw a concept map highlighting the development of testis	Anatomy	Development of Reproductive system
	Explain the Development and descent of ovaries	Anatomy	
	Draw a concept map highlighting the development of ovaries	Anatomy	
	Describe the anatomical basis for indifferent gonads, Klinefelter, turner syndromes & androgen insufficiency	Anatomy	

	Describe the Formation of Genital Ducts In different stage (paramesonephric and mesonephric ducts)	Anatomy	
	Describe the development of female genital ducts and glands, Development of uterus & Vagina. Describe related clinical anomalies: 1) Uterus Arcuatus 2) Uterus septus 3) Uterus Bicornis Bicollis 4) Uterus Bicornis Unicollis 5) Uterus Unicornis 6) Atresia of vagina 7) Double vagina 8) Imperforate hymen	Anatomy	
	Describe the development of male genital ducts and glands	Anatomy	
	Discuss the Development of male external genitalia	Anatomy	
	Describe the Development of female external genitalia	Anatomy	
	Explain the anatomical basis for the Associated congenital anomalies of male and female external genitalia (Hyposidiasis, Epispidiasis)	Anatomy	
	Describe the development of inguinal canal and descent of testis and embryological basis for Cryptorchidism, Ectopic Testis, Congenital Inguinal Hernia, Hydrocele	Anatomy	
	Klinefelter, turner syndromes & androgen insufficiency Describe the embryological basis for the coverings of testis	Anatomy	
CODE	**MICROSCOPIC STRUCTURE (HISTOLOGY & PATHOLOGY)**	**TOTAL HOURS = 14**	
	SPECIFIC LEARNING OUTCOMES	**DISCIPLINE**	**TOPIC**
EnR-A-035	Describe the histological basis and manifestation of Gastric Carcinoid Tumors	Anatomy/ Pathology	Stomach
	Classify the principal Enteroendocrine Cells on the basis of type, location, hormone produced and Actions	Anatomy	

EnR-A-036	Describe microscopic structure of Pituitary gland.	Anatomy	Pituitary Gland
	Classify pituitary gland on the basis of cell type, hormone produced and functions	Anatomy	
	Explain the histological basis and manifestation of Pituitary Adenomas	Anatomy	
EnR-A-037	Describe the light microscopic structure of Adrenal Gland	Anatomy	Adrenal Gland
	Explain the histological basis and manifestation of Addison disease	Anatomy	
EnR-A-038	Describe the light microscopic structure of endocrine pancreas	Anatomy	Pancreas
	Classify the pancreatic islets on the basis of cell type, hormone produced and functions	Anatomy	
	Explain the histological basis and manifestation of Diabetes Mellitus	Anatomy	
	Explain the components and functions of neuroendocrine system	Anatomy	
EnR-A-039	Describe the light microscopic structure of Thyroid Gland	Anatomy	Thyroid Gland
	Describe the light microscopic structure of Parathyroid Gland	Anatomy	
	Describe the light microscopic structure of Pineal gland	Anatomy	
EnR-A-040	Describe the light and ultramicroscopic structure of Testes, structure & function of Sertoli cells. Describe Blood testes Barrier	Anatomy	Testes
	Describe the histological basis and manifestation of Orchitis, Cryptorchidism	Anatomy Pathology	
EnR-A-041	Describe the light microscopic structure of Epididymis	Anatomy	Epididymis
EnR-A-042	Describe the light microscopic structure of vas deferens	Anatomy	Vas deferens
EnR-A-043	Describe the light microscopic structure of seminal vesicle	Anatomy	Seminal Vesicle

EnR-A-044	Describe the light microscopic structure of Prostate Gland	Anatomy	Prostate gland
	Describe the lobes of prostate and correlate with the pathologies of prostate	Anatomy pathology	
EnR-A-045	Describe the light microscopic structure of ovaries	Anatomy	Ovaries
	Describe the light microscopic structure of ovarian follicles in different stages of menstrual cycle.	Anatomy	
	Describe the histological basis and manifestation of Polycystic Ovary Syndrome	Anatomy Pathology	
EnR-A-046	Discuss the light microscopic structure of uterus	Anatomy	Uterus
	Describe the light microscopic structure of different stages of Menstrual cycle	Anatomy	
	Describe the histological basis and manifestation of Endometriosis	Anatomy Gynae & Obs.	
EnR-A-047	Describe the light microscopic structure of Fallopian Tube.	Anatomy	Fallopian Tube
EnR-A-048	Describe the light microscopic structure of Cervix	Anatomy	Cervix
	Describe the histological basis and manifestation of Cervical Carcinoma	Anatomy Pathology	
EnR-A-049	Describe the light microscopic structure of Vagina	Anatomy	Vagina
EnR-A-050	Describe light microscopic structure of mammary gland (inactive, during pregnancy, after lactation) Discuss histological basis of Breast cancer	Anatomy pathology	Mammary Gland

PRACTICAL

CODE	HISTOLOGY	TOTAL HOURS = 11	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
EnR-A-051	Identify draw & Label the Pituitary gland under light microscope	Anatomy	Pituitary gland

EnR-A-052	Identify draw & label the Thyroid & Parathyroid glands under light microscope	Anatomy	Thyroid & Parathyroid
EnR-A-053	Identify draw & Label the Adrenal gland under light microscope	Anatomy	Adrenal Gland
EnR-A-054	Identify draw & Label Testes, Epididymis & Vas deferens under the light Microscope	Anatomy	Testes Epididymis Vas Deferens
EnR-A-055	Identify draw & label the seminal vesicle & prostate gland under light Microscope	Anatomy	Seminal Vesicle Prostate Gland
EnR-A-056	Identify, draw and label the ovaries under light microscope	Anatomy	Ovaries
EnR-A-057	Identify, draw and label the slide of different phases of uterus under light microscope	Anatomy	Uterus
EnR-A-058	Identify, draw and label the fallopian tube under light microscope	Anatomy	Fallopian Tube
EnR-A-059	Identify, draw and label the cervix under light microscope	Anatomy	Cervix
EnR-A-060	Identify, draw and label the vagina under light microscope	Anatomy	Vagina
EnR-A-061	Identify, draw and label the mammary gland (different stages) under light microscope	Anatomy	Mammary gland
NORMAL FUNCTION			
THEORY			
CODE	**MEDICAL PHYSIOLOGY**	**TOTAL HOURS = 59**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
EnR-P-001	Define different chemical messengers. Enlist endocrine organs and hormones of the body. Enlist the hormones on the basis of chemical nature. Discuss the feedback control of hormone secretion. Explain the up and down regulation of receptors. Enlist the location of hormone receptors.	Biochemistry	Introduction to Endocrinology

	Explain the mechanism of intracellular signaling after hormone receptor activation. Name the hormones that use enzyme-linked hormone receptors signaling. Explain the mechanism of enzyme linked receptors. Enlist second messenger mechanisms for mediating intracellular hormonal functions. Define second messenger system. Explain the adenylyl cyclase– cAMP Second Messenger System. Enumerate the hormones that use the adenylyl cyclase–cAMP Second Messenger System. Explain The cell membrane phospholipid second messenger System. Enumerate the hormones that use cell membrane phospholipid second messenger system. Explain the mechanism of calcium Calmodulin system.		
EnR-P-001	Name the hormones/ factors of hypothalamus. Name the hormones of anterior pituitary. Name the hormones of posterior pituitary. Describe the functional relationship between hypothalamus, anterior and posterior pituitary gland. Explain the significance of hypothalamic- hypophysial portal circulation. Explain the hypothalamic pituitary tract. Explain the mechanism of action of growth hormone. Explain the actions of Growth hormone on Carbohydrate. Discuss the actions of Growth hormone on protein metabolism. Describe the actions of Growth hormone on fat metabolism.	Physiology	Hypothalamus / Pituitary Gland

	Explain the effect of growth hormone on skeletal growth and age. Explain the significance of somatomedins in mediating the actions of growth hormone. Describe the regulation of Growth Hormone. Describe the causes and features and treatment of panhypopituitarism in adults and childhood. Define Sheehan's syndrome. Enlist the types of dwarfism according to cause. Explain the pathophysiology and features of gigantism and acromegaly. Explain the mechanism of action of antidiuretic hormone. Discuss the actions of antidiuretic hormone. Regulation of antidiuretic hormone production. Elaborate the mechanism of action of oxytocin. Discuss the actions of oxytocin.		
EnR-P-002	Discuss the transport of thyroid hormone Discuss the mechanism of action of thyroid hormone Explain the actions of thyroid hormone on carbohydrate metabolism Discuss the actions of thyroid hormone on protein metabolism Explain the actions of thyroid hormones on fat metabolism Explain the non-metabolic functions of thyroid hormone Explain the regulation of thyroid hormone Enumerate antithyroid substances and explain their mechanism of action Enumerate the causes of hyperthyroidism	Physiology	Thyroid gland
	Explain the features, pathophysiology and treatment of thyrotoxicosis/ grave's disease Explain the thyroid function test to investigate hypo and		

	hyperthyroidism Enlist the causes of hypothyroidism Explain the pathophysiology of Hashimoto hypothyroidism Discuss the features and pathophysiology and treatment of myxedema Explain the pathophysiology and features of endemic colloid goiter Discuss the pathophysiology and features of nontoxic colloid goiter Enlist the causes of cretinism Discuss the features and pathophysiology of cretinism		
EnR-P-003	Name the hormones of adrenal cortex. Explain the physiological anatomy of adrenal cortex. Explain the cellular mechanism of Aldosterone action. Explain the effects of mineralocorticoid hormone. Discuss the regulation of aldosterone secretion. Discuss the metabolic and non-metabolic functions of cortisol Explain the interconversion of active cortisol and inactive cortisone by the 2, 11 beta hydroxysteroid dehydrogenase isoform. Explain the mechanism for regulation of glucocorticoid secretion by hypothalamus and pituitary Name adrenal androgens and enlist the functions of adrenal androgens. Discuss the causes, features, pathophysiology and treatment of hypoadrenalism (Addison's disease). Enlist the causes of hyperadrenalism. Explain the features, pathophysiology and treatment of Cushing's syndrome. Differentiate between Cushing's syndrome and Cushing's disease	Physiology & Pathology	Adreno cortical hormones

	Explain the clinical importance of dexamethasone suppression test to diagnose Cushing's syndrome. Discuss the features, pathophysiology and treatment of Conn's syndrome. Enlist the cause, features and pathophysiology of congenital adrenal hyperplasia/ Androgenital syndrome.		
EnR-P-004	Enumerate the types of pancreatic cells with their hormones. Explain the mechanism of action of insulin. Discuss the synthesis and mechanism of release of insulin. Explain the effects of insulin on carbohydrate, protein and lipid metabolism. Enlist the actions of insulin on liver, adipose tissue and skeletal muscle. Enlist the factors and conditions that increase or decrease insulin secretion.	Physiology	Pancreatic hormones
	Explain the role of insulin (and other hormones) in "switching" between carbohydrate and lipid metabolism. Discuss the effects of glucagon on carbohydrate and lipid metabolism. Explain the factors that regulate the secretion of glucagon. Explain the 24-hour regulation of glucose. Discuss the importance of blood glucose regulation. Explain the actions of somatostatin.		
EnR-P-005	Enlist the types of diabetes mellitus Explain the causes of Type I and type II diabetes mellitus Discuss the features and pathophysiology of diabetes mellitus Explain the role of insulin resistance, obesity and metabolic syndrome in developing type II diabetes	Physiology	Abnormalities of Glucose regulation

	mellitus Explain how to diagnose the diabetes mellitus Explain the treatment of type I and type II diabetes mellitus Explain the features, cause of insulinoma		
EnR-P-006	Discuss the physiological anatomy of parathyroid gland Explain the rapid and slow mechanism of resorption of bone by parathyroid hormone Discuss the actions of parathyroid Explain the control of parathyroid secretion by calcium ion concentration	Physiology	Parathyroid hormones
EnR-P-007	Discuss the effects of Vitamin D Discuss the effects of calcitonin on calcium Discuss the regulation of calcium (the first & second line of defense) Explain the causes and features of hypoparathyroidism Explain the causes and the features of primary and secondary hyperparathyroidism Enumerate the causes and features of osteoporosis	Physiology	Regulation of calcium in body
EnR-P-008	Enlist the functions of adrenal medullary hormones and explain pheochromocytoma	Physiology	Adreno medullary hormones
EnR-P-009	Describe the hormonal factors that affect spermatogenesis Explain the maturation and storage of sperm in epididymis Discuss the structure and physiology of a mature sperm Describe the composition of semen Discuss the functions of prostate & seminal vesicles in the formation of semen Explain the phenomenon of capacitation and its significance Describe the acrosome Reaction and its significance Discuss the role of pineal gland in reproduction	Physiology	Spermatogenesis Capacitation & Acrosome reaction
EnR-P-010	Discuss the site of secretion of testosterone	Physiology	Testosterone

	Name the active form of testosterone Explain the production of estrogen in males Describe the basic intracellular mechanism of action of testosterone		
	Explain the functions of testosterone in intrauterine life and after birth Discuss the regulation of male sexual functions by hormones from the hypothalamus and anterior pituitary gland		
EnR-P-011	Enumerate and explain the phases of ovarian cycle along with the hormonal changes Explain the postulated mechanism of ovulation Explain the formation and involution of Corpus luteum Endometrial cycle Explain the structural and hormonal changes of endometrial cycle Explain the regulation of female monthly cycle Discuss the role of progesterone on female sexual organs	Physiology	Menstrual cycle
EnR-P-012	Enumerate the ovarian hormones Discuss the synthesis of estrogen and progesterone Describe the interaction of follicular theca and granulosa cells for production of estrogens with the help of a diagram Explain the functions of the estrogens on different organs Discuss the role of progesterone on female sexual organs	Physiology	Female sexual hormones
EnR-P-013	Explain the physiological basis of puberty, menarche Define menopause Explain the cause of menopause Discuss the physiological changes in the function of the body at the time of menopause	Physiology	Puberty, menarche & menopause
EnR-P-014	Explain the non-hormonal functions of placenta	Physiology	Normal Pregnancy

	Explain the hormonal factors in pregnancy/ hormones of placenta Explain the changes in non- placental hormones during pregnancy Response of the mother's body to pregnancy Explain the mechanical and hormonal factors that increase uterine contractility during parturition		
EnR-P-015	Explain the physiology of lactation Discuss the actions of prolactin Justify the suppression of ejection of milk during pregnancy Discuss the physiological basis of suppression of the female ovarian cycles in nursing mothers for many months after delivery	Physiology	Lactation
CODE	**MEDICAL BIOCHEMISTRY**	**TOTAL HOURS = 35**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
EnR-B-001	Define different chemical messengers. Enlist endocrine organs and hormones of the body. Enlist the hormones on the basis of chemical nature. Discuss the feedback control of hormone secretion. Explain the up and down regulation of receptors. Enlist the location of hormone receptors. Explain the mechanism of intracellular signaling after hormone receptor activation. Name the hormones that use enzyme-linked hormone receptors signaling. Explain the mechanism of enzyme linked receptors. Explain the mechanism of hormones that receptors present in cytoplasm and nucleus (act on genetic machinery). Enlist second messenger mechanisms for mediating intracellular hormonal functions.	Biochemistry	Introduction to Endocrinology

	Define second messenger system. Explain the adenylyl cyclase- cAMP Second Messenger System. Enumerate the hormones that use the adenylyl cyclase-cAMP Second Messenger System. Explain The cell membrane phospholipid second messenger System. Enumerate the hormones that use cell membrane phospholipid second messenger system. Explain the mechanism of calcium Calmodulin system.		
EnR-B-002	Describe the features of Signal transduction Describe different types of receptors	Biochemistry	Signal Transduction
EnR-B-003	Discuss the classification of hormones	Biochemistry	Classification of hormones
EnR-B-004	Describe different types of second messengers Differentiate the G protein and non-G protein mediated pathways of signal transduction Discuss the hormones which act through: Cyclic AMP (Adenosine monophosphate) Discuss the hormones which act through: Cyclic GMP (guanosine monophosphate) Discuss the hormones which act through calcium phosphoinositol Describe the Receptor tyrosine kinase pathway of signal transduction Explain the Serine threonine kinase pathway of signal transduction Discuss the Nuclear Receptor mediated pathway of signal transduction Describe the Receptor coupled to Jak Stat pathway of signal transduction	Biochemistry	Second messengers
	Explain the control and negative feedback mechanism of hormone regulation	Biochemistry	

	Discuss the biosynthesis, secretion, mechanism of action and metabolic functions of Insulin, glucagon, epinephrine, cortisol, thyroid and growth hormone with special reference to carbohydrate, protein and lipid metabolism	Biochemistry	
	Interpret disorders of hormones on the basis of sign, symptoms and given data	Biochemistry	
EnR-B-005	Explain the synthesis, secretion, transport and clearance of steroid and protein hormones.	Biochemistry	Synthesis of Hormones
EnR-B-006	Enlist the steps in the synthesis of adrenocortical hormone. Explain the synthesis and secretion of ACTH (Adrenocorticotropic hormone) in association with melanocyte-stimulating hormone, lipotropin, and endorphin.	Biochemistry	Synthesis of ACTH & adrenocortical
EnR-B-007	Explain the structure, biosynthesis, secretion, transport, regulation, catabolism, mechanism of action and biochemical role of testosterone, progesterone and estrogen	Biochemistry	Synthesis of testosterone, progesterone and estrogen
EnR-B-008	Discuss the role of steroid hormones in oral contraception, Infertility	Biochemistry	Steroid in infertility
EnR-B-009	Define the following terms: chromosome, allele (dominant and recessive), gene, locus, heterozygote, homozygote, hemizygous, autosome, genotype, phenotype, haploid and diploid number of chromosomes, aneuploidy, proband, proposita, pedigree, propositus, penetrance, codominance and polygenic	Biochemistry	Nomenclature of genetics
EnR-B-010	Discuss the structures of genes, how they are organized and regulated.	Biochemistry	Genes
EnR-B-011	Describe Mendelian Law of Segregation and Law of Independent Assortment.	Biochemistry	Mendelian laws
EnR-B-012	Describe the patterns of inheritance characteristic of autosomal dominant, autosomal recessive, X- linked	Biochemistry	Patterns of inheritance

	dominant, X-linked recessive and mitochondrial traits.		
EnR-B-013	Interpret genetic symbols as they appear in pedigrees.	Biochemistry	Pedigrees
EnR-B-014	Analyze pedigree to determine the mode of inheritance of following traits: 1) X-linked recessive (Duchenne Muscular dystrophy) 2) X-linked dominant (Rickets) 3) Autosomal recessive (Xeroderma Pigmentosum) 4) Autosomal dominant (Huntington's Disease)) Mitochondrial disorder (Mitochondrial diabetes)	Biochemistry	Mode of inheritance
EnR-B-015	Discuss different structural and numerical chromosomal abnormalities.	Biochemistry	Chromosomal abnormalities
EnR-B-016	Interpret the normal human karyotype in terms of number and structure of chromosomes.	Biochemistry	Karyotypes
EnR-B-017	Describe the effect of the following chromosomal mutations on a segment of DNA: point mutation, frameshift mutation, deletion, insertion, inversion, Robertsonian Translocation and mosaicism.	Biochemistry	Mutations
EnR-B-018	Discuss the concept of central dogma from gene to protein (replication, transcription and translation)	Biochemistry	Central dogma (Overview)
EnR-B-019	Discuss the gene expression especially Lac operon and Tryptophan operon	Biochemistry	Gene Expression
EnR-B-020	Discuss the regulation of eukaryotic gene expression with special emphasis on iron metabolism and RNA interference	Biochemistry	Gene Expression
EnR-B-021	Discuss the following Recombinant DNA techniques with reference to their principles, procedures and application: 1) PCR (Polymerase Chain Reaction) 2) RFLP (Restriction Fragment Length Polymorphism) 3) Cloning 4) Human Genome Project 5) Blotting Techniques 6) DNA (Deoxyribose Nucleic Acid) sequencing	Biochemistry	Techniques

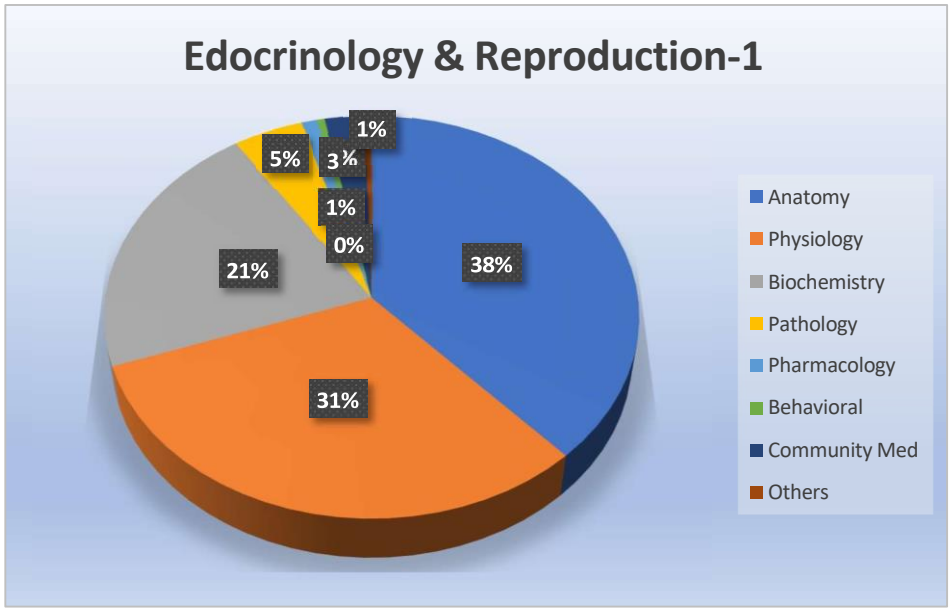
PRACTICAL

CODE	BIOCHEMISTRY	TOTAL HOURS = 06+02=08	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
EnR-B-022	Perform DNA extraction	Biochemistry	DNA
EnR-B-023	Perform Electrophoresis	Biochemistry	Electrophoresis
EnR-B-0234	Perform PCR	Biochemistry	PCR
EnR-B-025	Demonstrate ELISA (enzyme-linked immunoassay) to measure concentration of hormones	Biochemistry	ELISA
EnR-P-016	Perform Pregnancy test	Physiology	Pregnancy test
PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS			
CODE	**SPECIFIC LEARNING OBJECTIVES**	**TOTAL HOURS = 02**	
		DISCIPLINE	**TOPIC**
EnR-Ph-001	Explain the mechanism of action of thyroxine Explain Clinical uses and potential adverse effects with use of Thyroxine	Pharmacology	Anti thyroid substance & MOA, uses, effects
CODE	**SPECIFIC LEARNING OBJECTIVES**	**TOTAL HOURS = 09**	
		DISCIPLINE	**TOPIC**
EnR-Pa-001	Enumerate clinical manifestations along with hormone levels of anterior pituitary Classification of pituitary adenomas	Pathology	Pathology of Anterior Pituitary Gland
EnR-Pa-002	Enumerate and describe posterior pituitary syndromes (inappropriate ADH (Anti Diuretic Hormone) secretion, diabetes insipidus)	Pathology	Pathology of Posterior Pituitary Gland
EnR-Pa-003	Enumerate causes of hypo and hyperthyroidism along with levels of thyroid hormones	Pathology	Pathology of Thyroid Gland
EnR-Pa-004	Enumerate causes of hypercalcemia, hyper and hypoparathyroidism	Pathology	Pathology of Parathyroid Gland

EnR-Pa-005	Give etiological Classification of DM (Diabetes Mellitus) Differentiating features of DM-I and DM-II on the basis of pathogenesis, clinical features, diagnosis and complications	Pathology	Pathology of Endocrine Pancreas Gland
EnR-Pa-006	Enumerate causes of Cushing syndrome with lab investigations Causes and clinical features of adrenocortical insufficiency (Addison disease)	Pathology	Pathology of Adrenal Gland
EnR-Pa-007	Enumerate causes of lower genital tract infections and PIDs along with lab investigations Enumerate causes of infertility in females along with hormonal investigations Causes of dysfunctional uterine bleeding with histopathological features Pathophysiology and lab diagnosis of eclampsia and preeclampsia Causes of placental implantations (ectopic pregnancy)	Pathology	Female Reproductive Pathology
EnR-Pa-008	Enumerate causes of inflammation of male genital tract Causes of male infertility with semen analysis Describe pathological features of testicular torsion	Pathology	Male Reproductive Pathology
DISEASE PREVENTION AND IMPACT			
CODE	**SPECIFIC LEARNING OBJECTIVES**	**TOTAL HOURS = 05**	
		DISCIPLINE	**TOPIC**
EnR-CM-001	Define Diabetes Mellitus according to WHO (World Health Organization) criteria Classify types of Diabetes Mellitus	Community Medicine and Public Health	Diabetes

	Describe epidemiological risk factors for Diabetes Epidemiological distribution & statistics of DM Screening of community for Diabetes Apply levels of prevention for control of Diabetes.		
EnR-CM-002	Classify types of genetic disorders common in community. Describe health promotional measures to control genetic diseases. Describe screening programs for community to prevent genetic disorders. Apply levels of preventive and social measures for control of genetic abnormalities.	Community Medicine	Genetics
EnR-CM-003	Define women health and life cycle approach for health-related events. Highlight statistics related to human reproductive health issues. Enumerate health related problems across a woman's reproductive lifetime. Explain the components of reproductive health.	Community Medicine	Reproductive health

CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 1	
		DISCIPLINE	TOPIC
EnR-BhS-001	Discuss common sexual dysfunctions and their prevalence, with emphasis on culture bound syndromes. Identify the various biological, psychological, and relational factors that can contribute to sexual difficulties. Discuss barriers to seek help. Discuss the importance of person centered and nonjudgmental approach when discussing sexual health concerns. Explain the ethical obligations of healthcare professionals in respecting patient confidentiality and informed consent when addressing sexual health issues.	Behavioral Sciences	Sexual difficulties and Medical Practices
AGING			
CODE	**THEORY**	**TOTAL HOURS = 01**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
EnR-Ag-001	Enlist the changes that occur in female body after menopause.	Gynae/ OBS	Menopause



Module Weeks	Recommended Minimum Hours
07	194

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WEEK – 1 THEME:

Date 03 June to 07 June 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15ar	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00p	3:00pm-4:00pm
Monday 3RD JUNE	OSPE/OSVE BLOCK 4	OSPE/OSVE BLOCK 4		OSPE/OSVE BLOCK 4	OSPE/OSVE BLOCK 4	OSPE/OSVE BLOCK 4	LGIS Islamiat/Pak studies *H.O.D		
Tuesday 4th June	OSPE/OSVE BLOCK 4	OSPE/OSVE BLOCK 4		OSPE/OSVE BLOCK 4	OSPE/OSVE BLOCK 4	OSPE/OSVE BLOCK 4	LGIS Community/Medicine EnR CM 001 Diabetes. *HOD		
Wednesday 5th June	Practicals Histology (A) Physiology /CFRC (B) Biochemistry (C)			LGIS Physiology 001 Hypothalamus Pituitary Gland Dr Jabeen	LGIS Anatomy SH EnR-A-40 TESTIS *HOD	LGIS Physiology 001 Hypothalamus Pituitary Gland Dr Jabeen	SGD HOD" Anatomy Gross EnR-A-001 Diencephalon	LGIS QURAN. *Prof. M. Ali*	S D L
Thursday 6th June	Practicals Histology (B) Physiology /CFRC (C) Biochemistry (A)			LGIS Biochemistry EnR-B-001 Hormone Secretion and Receptors	SGD HOD" Anatomy Gross EnR-A-002 Thyroid and parathyroid gland	LGIS Physiology 001 Hypothalamus Pituitary Gland Dr Jabeen	Biochemistry EnR-B-001 Mechanism of action of Hormones	LGIS Physiology 002 Thyroid gland Dr Iram	
Friday 7th June	Practicals Histology (C) Physiology/CFRC (A) Biochemistry (B)			LGIS Anatomy SH EnR-A-41 EnR-A-42 EPIDIDMIS VAS DEFERENS *HOD	LGIS Physiology 002 Thyroid gland Dr Iram	Biochemistry EnR-B-002, 003 Signal Transduction, Classification of Hormones	1:15pm-2:00pm Jumma Prayer	Biochemistry EnR-B-004 Types of Second Messanger	

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WEEK – 2 THEME:

Date 10 June to 14 June 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15an	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00pr	3:00pm-4:00pm
Monday 10th June	LGIS Anatomy SH EnR-A-45 Seminal vesicle EnR-A-44 Prostate HOD*	LGIS Biochemistry EnR-B-004 Epinephrine, Cortisol, GH		LGIS Physiology 001 Hypothalamus Pituitary Gland HOD	LGIS Biochemistry EnR-B-004 Thyroid Hormones	SGD HOD* Anatomy Gross EnR-A-003 Testis EnR-A-004 Accessory male organ	LGIS Physiology 001 Hypothalamus Pituitary Gland Dr Jabeen	LGIS PERL *HOD	
Tuesday 11th June	LGIS Biochemistry EnR-B-005 Thyroid hormones	LGIS Community/Medicine EnR-CM-001 Diabetes *HOD		LGIS Physiology 001 Hypothalamus Pituitary Gland HOD	SGD HOD* Anatomy Gross EnR-A-005 Prostate	SGD HOD* Anatomy Gross EnR-A-006 Testis clinical conditions	LGIS Physiology 002 Thyroid gland Dr Iram	2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Wednesday 12th June	Practicals Histology (A) CFRC (B) Biochemistry (C)			LGIS Biochemistry EnR-B-006 ACTH	SGD HOD* Anatomy Gross EnR-A-007 Suprarenal gland	LGIS Physiology 002 Thyroid gland Dr Iram	SGD HOD* Anatomy Gross EnR-A-008 Pelvic girdle EnR-A-009 Sacroiliac joints	LGIS QURAN. *Prof. M. Ali*	S D L
Thursday 13th June	Practicals Histology (B) CFRC (C) Biochemistry (A)			LGIS Biochemistry EnR-B-007 Testesterone, Progesterone, Estrogen	SGD HOD* Anatomy Gross EnR-A-010 Boney Pelvis	Biochemistry EnR-B-008 Sterod hormones in infertility, oral Contraceptives	LGIS Physiology PBL	LGIS Physiology PBL	
Friday 14th June	Practicals Histology (C) CFRC (A) Biochemistry (B)			TBL Anatomy SH EnR-A-45 Ovaries *HOD	LGIS Physiology 002 Thyroid gland Dr Iram	LGIS Physiology 001 Hypothalamus Pituitary Gland Dr Jabeen	1:15pm-2:00pm Jumma Prayer	SGD HOD* Anatomy Gross	

Week 1 | Week 2 | Sheet3 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Sheet1

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WEEK – 3 THEME:

Date 15 July to 19 July 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15an	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00pr	3:00pm-4:00pm
Monday 15th July	**LGIS Physiology 003 Adreno cortical hormones**	**LGIS Biochemistry EnR-B-004 Insulin**		**LGIS Physiology 008 Adreno medullary hormones**	**LGIS Anatomy SH** *HOD	**SGD HOD* Anatomy Gross**	**SGD HOD* Anatomy Gross**	**LGIS** Pathology *EnR-Pa-oof* Pituitary gland	
Tuesday 16th July	**LGIS Biochemistry**	**LGIS Community/Medicine EnR-CM-002 Genetics *HOD**		**LGIS Physiology**	**SGD HOD* Anatomy Gross**	**SGD HOD* Anatomy Gross**	**LGIS Physiology**	**2:15pm-3:00pm LGIS** Islamiat/Pak studies *H.O.D	
Wednesday 17th July	**Practicals Histology (A) CFRC (B) Biochemistry (C)**			**LGIS**	**SGD HOD* Anatomy Gross**	**LGIS Physiology**	**SGD HOD* Anatomy Gross**	**LGIS QURAN.** *Prof. M. Ali*	**SDL**
Thursday 18th July	**Practicals Histology (B) CFRC (C) Biochemistry (A)**			**LGIS Biochemistry EnR-B-004 Glucagon**	**LGIS Physiology 003 Adreno cortical hormones**	**LGIS Physiology 008 Adreno medullary hormones**	**LGIS** Pathology *EnR-Pa-oof* Pituitary gland	**SGD HOD* Anatomy Gross EnR-A-012 Pelvic floor**	
Friday 19th July	**Practicals Histology (C) CFRC (A) Biochemistry (B)**			**LGIS Anatomy SH** EnR-A-46 Uterus *HOD	**LGIS Physiology 003 Adreno cortical hormones**	Biochemistry EnR-B-009 Defination	**1:15pm-2:00pm** Jumma Prayer	**SGD Dissection class / Museum activity Anatomy**	

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WEEK – 4 THEME:

Date 22 July to 26 July 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15ar	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00p	3:00pm-4:00pm
Monday 22nd July	TEST	LGIS Biochemistry EnR-B-010 Structure of gene		LGIS Physiology 003 Adreno cortical hormones	FLIP CLASSROOM Anatomy SH EnR-A-47 Fallopian tube EnR-A-48 Cervix EnR-A-49 vagina *HOD	LGIS Physiology 003 Adreno cortical hormones	SGD HOD" Anatomy Gross EnR-A-014 Pelvic girdle EnR-A-015 Peritoneal cavity of pelvis	LGIS Pathology *EnR-Pa-003* Pituitary gland	
Tuesday 23rd July	LGIS Physiology 003 Adreno cortical hormones	LGIS Community/Medicine EnR-CM-002 Genetics "HOD		LGIS Physiology 004 Pancreatic hormones	LGIS HOD" Anatomy SE EnR-A-32 Development of Reproductive system	SGD HOD" Anatomy Gross EnR-A-16 Sacrum EnR-A-17 Pelvic fascia	LGIS EnR-B-011 Mendelian law of segregation	2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Wednesday 24th July	Practicals Histology (A) CFRC (B) Biochemistry (C)			LGIS EnR-B-012 Patterns of inheritance	LGIS HOD" Anatomy SE EnR-A-33 Testis	LGIS Physiology 003 Adreno cortical hormones	SGD HOD" Anatomy Gross EnR-A-18 Pelvic outlet & inlet EnR-A-19 Peritoneal reflections in pelvis	LGIS QURAN. *Prof. M. Ali*	S D L
Thursday 25th July	Practicals Histology (B) CFRC (C) Biochemistry (A)			LGIS Biochemistry EnR-B-015 Chromosomal Abnormalities	LGIS HOD" Anatomy SE EnR-A-34 Ovary	Physiology PBL	Physiology PBL	LGIS Pathology *EnR-Pa-005* Thyroid gland	
Friday 26th July	Practicals Histology (C) CFRC (A) Biochemistry (B)			LGIS Anatomy SH EnR-A-50 Mammary gland *HOD	LGIS Physiology 004 Pancreatic hormones	Biochemistry EnR-B-016 Normal Human Karotype	1:15pm-2:00pm Jumma Prayer	LGIS Physiology 004 Pancreatic hormones	

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WEEK – 5 THEME:

Date 29 July to 2 August 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00pm	3:00pm-4:00pm
Monday 29th July	TEST Physiology	LGIS Biochemistry EnR-B-017 Mutations		LGIS Physiology 005 Abnormalities of Glucose regulation HOD	PRESENTATION BY STUDENTS Anatomy SH EnR-A-35 Stomach EnR-A-36 Pancreas *HOD	SGD HOD* Anatomy Gross EnR-A-20 Pelvic Vessels	SGD HOD* Anatomy Gross EnR-A-21 Pelvic Lymph nodes	LGIS Pathology EnR-Parathyroid Parathyroid gland	
Tuesday 30th July	LGIS Biochemistry EnR-B-018 Replication	LGIS Community/Medicine EnR-CM-003 Reproductive health *HOD		LGIS Physiology 005 Abnormalities of Glucose regulation HOD	LGIS HOD* Anatomy SE EnR-A-34 Development of reproductive system	SGD HOD* Anatomy Gross EnR-A-022 Pelvic vessels & nerves	LGIS Physiology 006 Parathyroid hormones	2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Wednesday 31st July	Practicals Histology (A) CFRC (B) CFRC (C)			LGIS EnR-B-018 Transcription, translation	LGIS HOD* Anatomy SE EnR-A-34 Development of reproductive system	LGIS Physiology 006 Parathyroid hormones	SGD HOD* Anatomy Gros EnR-A-022 Pelvic vessels & nerves	LGIS QURAN. Prof. M. Ali	S D L
Thursday 1st August	Practicals Histology (B) CFRC (C) CFRC (A)			LGIS Biochemistry EnR-B-019 Operon	LGIS HOD* Anatomy SE EnR-A-34 Development of reproductive system	LGIS Physiology 006 Parathyroid hormones	LGIS Pathology EnR-Pancreas Pancreas	Biochemistry EnR-B-020 Regulation of Gene Expression	
Friday 2nd August	Practicals Histology (C) CFRC (A) CFRC (B)			LGIS Anatomy SH EnR-A-36 Pituitary gland *HOD	LGIS Physiology 007 Regulation of calcium in body	LGIS Physiology 007 Regulation of calcium in body	1:15pm-2:00pm Jumma Prayer	Biochemistry EnR-B-020 Regulation of Gene Expression	

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WEEK – 6 THEME:

Date 05 August to 09 August 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15an	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00pr	3:00pm-4:00pm
Monday 5th August	**TEST Biochemistry**	**LGIS Biochemistry EnR-B-021 PCR**		**LGIS Physiology 009 Male Reproductive System HOD**	**LGIS Anatomy SH** EnR-A-37 Adrenal gland *HOD	**SGD HOD* Anatomy Gross** EnR-A-023 Pelvis	**SGD HOD* Anatomy Gross** EnR-A-023 Pelvis	**LGIS QURAN.** *Prof. M. Ali*	
Tuesday 6th August	**LGIS Physiology**	**LGIS** Pathology *EnR-Pa-006* Adrenal gland		**LGIS Physiology 010 Male Reproductive System HOD**	**LGIS HOD* Anatomy SE EnR-A-26 Development of thyroid gland**	**SGD HOD* Anatomy Gross EnR-A-023 Pelvis**	**LGIS Biochemistry EnR-B-021 RFLP**	**2:15pm-3:00pm LGIS** Islamiat/Pak studies *H.O.D	
Wednesday 7th August	**Practicals Histology (A) CFRC (B) CFRC (C)**			**LGIS Physiology 011. Menstral cycle**	**LGIS HOD* Anatomy SE EnR-A-27 Development of parathyroid gland**	**LGIS Physiology 012 Female sexual hormones**	**SGD HOD* Anatomy Gross** EnR-A-024 Perineum	**LGIS QURAN.** *Prof. M. Ali*	**S D L**
Thursday 8th August	**Practicals Histology (B) CFRC (C) CFRC (A)**			**LGIS Biochemistry EnR-B-021 Cloning, Human Genome Project**	**LGIS HOD* Anatomy SE EnR-A-28 Development of thyroid and Parathyroid gland**	**LGIS Physiology 012 Female sexual hormones**	**LGIS Pharmacology EnR-Ph-001 *HOD**	**LGIS** *Dr. Sadia*	
Friday 9th August	**Practicals Histology (C) CFRC (A) CFRC (B)**			**LGIS Anatomy SH** EnR-A-39 Thyroid gland *HOD	**LGIS Physiology 013 Puberty, menarche & menopause**	Biochemistry EnR-B-021 Blotting Techniques	**1:15pm-2:00pm** Jumma Prayer	**LGIS Physiology 013 Puberty, menarche & menopause**	

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WEEK – 7 THEME:

Date 12 August to 16 August 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15an	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00pr	3:00pm-4:00pm
Monday 12th August	MODULE TEST	MODULE TEST		**LGIS Physiology 014 Normal Pregnancy HOD**	**LGIS Anatomy SH** EnR-A-39 Thyroid gland *HOD	**LGIS** Pathology *EnR-Pa-007* female reproductive patho	**SGD HOD* Anatomy Gross** EnR-A-024	**SGD HOD* Anatomy Gross** EnR-A-024	
Tuesday 13th August	**LGIS Biochemistry EnR-B-021 DNA sequencing**	**LGIS** Pathology *EnR-Pa-008* Male reproductive patho		**LGIS Physiology 014 Normal Pregnancy HOD**	**LGIS HOD* Anatomy SE EnR-A-29 Development of pituitary gland**	**SGD HOD* Anatomy Gross EnR-A-025 Pelvis**	**LGIS Physiology 015 Lactation**	**2:15pm-3:00pm LGIS** Islamiat/Pak studies *H.O.D	
Wednesday 14th August	**LGIS Physiology**	**SGD HOD* Anatomy Gross**		**LGIS**	**LGIS HOD* Anatomy SE**	**LGIS Physiology**	**SGD HOD* Anatomy Gross**	**LGIS QURAN.** *Prof. M. Ali*	**SDL**
Thursday 15th August	**SGD HOD* Anatomy Gross** Dissection activity	**LGIS Physiology 015 Lactation**		**LGIS Biochemistry EnR-B-013 Pedigree Analysis**	**LGIS HOD* Anatomy SE EnR-A-30 EnR-A-31 Development of adrenal gland**	**LGIS Physiology Revision**	**LGIS Pharmacology EnR-Ph-001 *HOD**	**LGIS** *Aging* EnR-Ag-001. Menopause (gynelobse)	
Friday 16th August	**SGD HOD* Anatomy Gross** REVISION	**LGIS Physiology Revision**		**LGIS Anatomy SH** REVISION *HOD	**LGIS Physiology Revision**	Biochemistry EnR-B-014 Pedigree Analysis	**1:15pm-2:00pm** Jumma Prayer	**LGIS PERL** *HOD	

C-FRC SCHEDULE FOR 2nd YEAR MBBS
SESSION 2023-2027

S. No	Week	Date/Time	Topic	Batch No	Venue	Facilitator	Log Book Entries
1.	Week 1	05-06-24 08.00am-10.00am	Measurement of blood glucose level	B	Physio Lab	*C-FRC In charge	3 Log book Entries
2.	Week 1	06-06-24 08.00am-10.00am	Measurement of blood glucose level	C	Physiol Lab	*C-FRC In charge	3 Log book Entries
3.	Week 1	07-06-24 08.00am-10.00am	Measurement of blood glucose level	A	Physio Lab	*C-FRC In charge	3 Log book Entries
4.	Week 2	12-06-24 08.00am-10.00am	Examination of the thyroid gland	B	Physio Lab	*C-FRC In charge	3 Log book Entries
5.	Week 2	13-06-24 08.00am-10.00am	Examination of the thyroid gland	C	Physio Lab	*C-FRC In charge	3 Log book Entries
6.	Week 2	14-06-24 08.00am-10.00am	Examination of the thyroid gland	A	Physio Lab	*C-FRC In charge	3 Log book Entries
	AFTER SUMMER VACATION						
7.	Week 3	18-07-24 08.00am-10.00am	Examination for Acromegaly	C	Physio Lab	*C-FRC In charge	3 Log book Entries
8.	Week 3	19-07-24 08.00am-10.00am	Examination for Acromegaly	A	Physio Lab	*C-FRC In charge	3 Log book Entries
9.	Week 4	24-07-24 08.00am-10.00am	Suturing	B	Physio Lab	*C-FRC In charge	2 Log book Entries
10.	Week 4	25-07-24 08.00am-10.00am	Suturing	C	Physio Lab	*C-FRC In charge	2 Log book Entries
11.	Week 4	26-07-24 08.00am-10.00am	Suturing	A	Physio Lab	*C-FRC In charge	2 Log book Entries
12.	Week 5	31-07-24 08.00am-10.00am	Examination for Acromegaly	B C	Physio Lab	*C-FRC In charge	3 Log book Entries
13.	Week 5	01-08-24 08.00am-10.00am	Revision	C A	Physio Lab		
14.	Week 5	02-08-24 08.00am-10.00am	Revision	A B	Physio Lab		

BLOCK 5
HEAD & NECK MODULE

Modular Outcome:

- Integrate the anatomical and pathophysiological aspects of the Head & Neck, eye, ear, nose, tongue, vestibular system and the neural pathways, receptors involved in their function with the clinical aspects.
- Develop the ability to identify and diagnose common pathologies such as cataracts, glaucoma, age-related degeneration, hearing loss, impacted wax, otitis media and olfactory disorders.
- Demonstrate the clinical examination (simulation) skills necessary for the assessment of special senses, such as ophthalmoscopy, otoscopy, rhinoscopy, and vestibular testing.
- Differentiate the differential diagnosis and options available for special senses conditions, including medical, surgical, and rehabilitative approaches.
- Illustrate awareness of the impact on overall health and well-being, the importance of preventing and early detection of related disorders.
- Develop the ability to communicate effectively with patients and their families, including explaining diagnosis and treatment options, and providing emotional support.
- Practice the attitude to work in a multidisciplinary team, collaborating with other healthcare professionals to provide comprehensive care for patients.
- Equip themselves with the ability to appreciate the significance of lifelong learning and professional development to keep up with latest advances in the clinical field.

NORMAL STRUCTURE			
THEORY			
CODE	**GROSS ANATOMY**	**TOTAL HOURS = 56**	
	SPECIFIC LEARNING OUTCOMES	**DISCIPLINE**	**TOPIC**
HNSS-A-001	Define the boundaries and openings of orbital cavity. List orbital contents and structures traversing these openings.	Human Anatomy	Vision
	In a tabulated manner list the extraocular and intraocular muscles of eyeball giving their nerve supply and actions		
	List and define the movements of eyeball with special reference to orbital and visual axis		
	Describe the functional modalities, course, distribution, branches of oculomotor, trochlear and abducent nerve. Describe the location, roots and distribution of ciliary ganglion.		
	Describe the course and distribution of optic nerve in reference to visual pathway. Give the effects of its lesions.		
	Give the clinical correlates of nerves supplying the eyeball and its muscles. Give anatomical justification for Horner's syndrome.		
	Describe the course and branches of ophthalmic artery mentioning its origin and termination.		
	Describe the structure of eyelids, conjunctiva and tarsal glands with their neurovascular supply		
	List the parts of Lacrimal apparatus giving their location and anatomical features. Describe the nerve supply of lacrimal gland.	Human Anatomy	
	Describe the location, roots and distribution of	Human	

	pterygopalatine ganglia.	Anatomy	
	Give the anatomical structure of eyeball emphasizing on its three coats and their neurovascular supply	Human Anatomy	
HNSS-A-002	Describe the boundaries of nasal cavity: nasal septum, lateral wall of nose, roof and floor. Give their anatomical features and neurovascular supply.	Human Anatomy	Olfaction
	Describe the anatomical features and neurovascular supply of external nose	Human Anatomy	
	List the paranasal sinuses giving their locations, openings, neurovascular supply and clinical significance.	Human Anatomy	
	Describe the course and distribution of olfactory nerve in reference to olfactory pathway. Give the effects of its lesions.	Human Anatomy	
	Describe the anatomical features and neurovascular supply of external ear	Human Anatomy	
HNSS-A-003	Describe the boundaries, contents, neurovascular supply and communications of middle ear cavity.	Human Anatomy	Hearing
	Describe the parts, anatomical features and neurovascular supply of internal ear.	Human Anatomy	
	Describe the course and distribution of vestibulocochlear neve mentioning the effects of its lesion. Describe auditory pathway.	Human Anatomy	
HNSS-A-004	Describe the anatomical features of tongue with emphasis on its mucosa, attachments, musculature, vascular supply and lymphatic drainage.	Human Anatomy	Taste
	Describe the nerve supply of tongue (general sensory, special sensory and motor) with reference to their lesions and embryological basis.	Human Anatomy	

	List taste buds mentioning their structure, location and nerve supply. Describe the taste pathway.	Human Anatomy	
	Discuss lesions of motor and sensory nerves supplying the tongue. Discuss the anatomical correlates of lingual carcinoma in reference to lymphatic drainage of tongue.	Human Anatomy	
HNSS-A-005	Describe the features of Norma Frontalis, Norma Verticalis, Norma Parietalis, Norma occipitalis and Norma Basalis	Human Anatomy	Skull
	Describe the features of Norma lateralis: temporal, infratemporal & pterygopalatine fossae giving their boundaries, contents and communications.	Human Anatomy	
	Discuss the sutures and fontanelles of skull, their age changes and clinical significance.	Human Anatomy	
HNSS-A-006	List the layers of scalp and describe the anatomical features with neurovascular supply and lymphatic drainage of scalp.	Human Anatomy	Scalp
	Give anatomical justification of spread of scalp infections, profuse bleeding in superficial scalp lacerations, gaping of scalp wounds and black eye.	Human Anatomy	
HNSS-A-007	Enlist in tabulated manner the muscles of facial expression and mastication, giving their nerve supply and actions. Define modiolus.	Human Anatomy	Muscles of facial expressions
HNSS-A-008	Describe the functional modalities, course, branches, and distribution of cranial nerves innervating the face (sensory and motor): trigeminal and facial nerves	Human Anatomy	Neurovascular supply of face
	Describe the vascular supply and lymphatic drainage of face.	Human Anatomy	
	Draw a diagram to illustrate cutaneous innervation of face.	Human Anatomy	

	Discuss anastomoses of facial artery with contralateral vessels and branches of internal carotid artery with their clinical significance.	Human Anatomy	
HNSS-A-009	Describe the danger area of face with it its clinical significance. Define the routes of spread of infection from face and scalp to intracranially.	Human Anatomy	Danger area
HNSS-A-010	Describe the bony features and muscle attachment of mandible.	Human Anatomy	Mandible.
	Classify temporomandibular joint mentioning its ligaments, relations, nerve supply and movements (with their mechanics and muscles producing them).	Human Anatomy	
HNSS-A-011	Describe anatomical features, relations and neurovascular supply of parotid gland and its duct, mentioning the structures entering and exiting the gland	Human Anatomy	Parotid gland
	Discuss the clinical correlates of parotid gland: parotiditis, Mumps, Frey's syndrome, parotid duct stones and parotid tumor surgery with its complications	Human Anatomy	
HNSS-A-012	Describe the parts and boundaries of oral cavity and give its relation to the Waldeyers' ring.	Human Anatomy	Waldeyers' ring
HNSS-A-013	Describe the anatomical features of hard and soft palate with their neurovascular supply.	Human Anatomy	Hard and soft
HNSS-A-014	Describe anatomical features, relations and neurovascular supply of submandibular and sublingual glands with their ducts.	Human Anatomy	Submandibular Sublingual glands
HNSS-A-015	Describe the location, roots and distribution of otic and submandibular ganglia.	Human Anatomy	Otic and Submandibular ganglia.
HNSS-A-016	Describe the anatomical features of Hyoid bone and give attachments on the bone.	Human Anatomy	Hyoid bone
HNSS-A-017	Enumerate the types of cervical vertebrae and list the differences between them.	Human Anatomy	cervical vertebrae

	Describe the anatomical features and attachments on cervical vertebrae.		
	Classify the joints of cervical vertebrae mentioning their ligaments, movements with muscle producing them and neurovascular supply.	Human Anatomy	
HNSS-A-018	List the prevertebral muscles of cervical region. Describe their attachments, actions and innervation.	Human Anatomy	Prevertebral muscles
HNSS-A-019	Enumerate parts of deep cervical fascia with their respective extents, attachments, relations and contents.	Human Anatomy	Deep cervical fascia
HNSS-A-020	Describe the facial spaces in head and neck mentioning their communications and their relation to spread of infection.	Human Anatomy	Facial spaces
HNSS-A-021	Describe the attachments, actions and nerve supply of infrahyoid and suprahyoid muscles of neck.	Human Anatomy	Infrahyoid and suprahyoid muscles
HNSS-A-022	Describe the location, formation and distribution of ansa cervicalis.	Human Anatomy	Ansa cervicalis.
HNSS-A-023	Describe the attachments, actions and nerve supply of sternocleidomastoid and trapezius.	Human Anatomy	Sternocleidomastoid and trapezius
HNSS-A-024	Describe the boundaries and contents of suboccipital, anterior and posterior triangles of neck.	Human Anatomy	Triangles of neck
HNSS-A-025	Describe the cervical part of trachea and esophagus with their neurovascular supply.	Human Anatomy	Trachea and esophagus
HNSS-A-026	Describe the location, anatomical features and vascular supply of thyroid and parathyroid glands. List the variations in location of parathyroid glands.	Human Anatomy	Thyroid, Parathyroid glands
HNSS-A-027	Describe the carotid arteries mentioning their origin, course, branches, distribution and termination.	Human Anatomy	Carotid arteries
HNSS-A-	Describe carotid body and carotid sinus and give	Human	Carotid body

028	their clinical significance.	Anatomy	
HNSS-A-029	Give the venous drainage of Head and Neck region. Describe the formation, tributaries and area of drainage of vessels constituting jugular venous system.	Human Anatomy	Head & Neck venous supply
HNSS-A-030	Name the superficial and deep cervical lymph nodes and give their location and drainage areas	Human Anatomy	Lymphatics
HNSS-A-031	Describe the location, formation, branches, distribution and lesions of cervical plexus	Human Anatomy	Cervical plexus
HNSS-A-032	Name the parts of pharynx giving their extent, anatomical features, structure and neurovascular supply.	Human Anatomy	Pharynx
	Name the pharyngeal constrictor muscles defining their attachments, innervation and structure traversing the gaps between adjacent muscles.	Human Anatomy	
HNSS-A-033	Name the parts of larynx giving their extent, anatomical features, musculoskeletal framework and neurovascular supply.	Human Anatomy	Larynx
HNSS-A-034	Discuss the location, anatomical features, relations and vascular supply of tonsils: nasopharyngeal, palatine and lingual.	Human Anatomy	Tonsils
CODE	**EMBRYOLOGY & POST-NATAL DEVELOPMENT**	**TOTAL HOURS = 15**	
	SPECIFIC LEARNING OUTCOMES	**DISCIPLINE**	**TOPIC**
HNSS-A-035	List the components of pharyngeal apparatus. Describe the development of pharyngeal arches, grooves, pouches and membrane and give derivatives and fate of each of them.	Embryology	Pharyngeal apparatus pharyngeal arches
HNSS-A-036	Describe the development and histogenesis of auditory tube, tympanic cavity, tonsils, thymus and parathyroid	Embryology	auditory tube, tympanic cavity, tonsils, thymus and parathyroid
HNSS-A-	Discuss the embryological basis of congenital	Embryology	Congenital

037	anomalies related to the development of pharyngeal arches, pharyngeal clefts and pharyngeal pouches: cervical sinus/fistula/cyst, 1st arch syndrome, DiGeorge syndrome, congenital malformations of thymus and parathyroid glands		anomalies
HNSS-A-038	Describe the development of tongue and thyroid gland.	Embryology	Tongue and Thyroid gland.
	List and provide embryological basis of congenital anomalies of tongue and thyroid gland.	Embryology	
HNSS-A-039	Describe the development of face and nasolacrimal duct and their respective congenital anomalies.	Embryology	Face and nasolacrimal duct
HNSS-A-040	Describe the development of nasal cavity and paranasal sinuses. Give the associated congenital anomalies.	Embryology	Nose
HNSS-A-041	Describe the development of lip and palate and their associated congenital malformations.	Embryology	Lips and palate
	Explain the types and embryologic basis of cleft lip and cleft palate.	Embryology	
HNSS-A-042	Describe the development of optic vesicle and retina.	Embryology	Eye & ear
	Describe the development of cornea, sclera, choroid, iris, ciliary body and lens and relate it to their respective congenital anomalies.	Embryology	
	Describe the development of internal ear and give the embryological basis of associated congenital anomalies.	Embryology	
CODE	**MICROSCOPIC ANATOMY (HISTOLOGY & PATHOLOGY)**	**TOTAL HOURS = 08**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
HNSS-A-043	Describe the light and electron microscopic structure of tongue mentioning the histological structure of lingual papillae and taste buds.	Histology	Tongue

HNSS-A-044	Describe the histological structure of parotid, submandibular and sublingual glands.	Histology	Glands
	Compare and contrast the histological structures of parotid, submandibular and sublingual glands.	Histology	
HNSS-A-045	Differentiate between serous and mucous acini. Describe the structure and location of serous demilunes. Describe the serous and mucous acini and give histological differences between the two.	Histology	Head & Neck
HNSS-A-046	Describe the histological structure of thyroid gland and parathyroid gland.	Histology	Thyroid, Parathyroid glands
HNSS-A-047	Describe the histological structure of layers of eyeball, eyelid and retina.	Histology	Eye
	Describe the light and electron microscopic structure of cornea.	Histology	
HNSS-A-048	Describe the histological and ultramicroscopic structure of internal ear with special reference to Organ of Corti.	Histology	Ear

PRACTICAL

CODE	HISTOLOGY	TOTAL HOURS = 09	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
HNSS-A-049	Identify, draw and label diagrams to show histological structure of tongue, lingual papillae and taste buds.	Histology	tongue
HNSS-A-050	Identify, draw and label a diagram to show histological structure of parotid, submandibular and sublingual glands.	Histology	Glands
HNSS-A-051	Draw and label diagrams to show histological structure of serous demilunes, serous and mucous acini.	Histology	Head & Neck

HNSS-A-052	Draw and label a diagram to show histological structure of thyroid and parathyroid gland.	Histology	Thyroid, Parathyroid
HNSS-A-053	Draw and label diagrams to show histological structure of eyelid and cornea.	Histology	Eye
	Draw and label a diagram to show histological structure of retina. List its histological layers and their respective components	Histology	
HNSS-A-054	Draw and label a diagram to show histological structure of internal ear.	Histology	Ear
NORMAL FUNCTION			
THEORY			
CODE	**MEDICAL PHYSIOLOGY**	**TOTAL HOURS = 30**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
HNSS-P-001	Define and describe the visual acuity	Physiology	Visual Acquity
	Define Emmetropia	Physiology	
	Enlist the errors of refraction	Physiology	
	Explain the cause, features, physiological basis, and correction of Hyperopia	Physiology	
	Explain the cause, features, physiological basis, and correction of myopia	Physiology	
	Explain the cause, features, physiological basis, and correction of astigmatism	Physiology	
	Describe the pathophysiology and treatment of cataract	Integrate with Ophthalmology	
HNSS-P-002	Interpret common treatment modalities for Refractive errors	Physiology	Refractive Errors
HNSS-P-003	Describe the mechanism of formation and outflow of aqueous humor	Physiology	Fluid systems of the Eye
	Describe normal value of intraocular pressure and its regulation	Physiology	

	Describe the method for measuring the intraocular pressure	Integrate with Ophthalmology	
	Describe the causes and features and pathophysiology of glaucoma	Physiology	
HNSS-P-004	Discuss the clinical features of Open Angle and Angle Closure Glaucoma	Physiology	Glaucoma
HNSS-P-005	Describe the physiological anatomy and function of structural elements of retina	Physiology	Retina
	Enlist different layers of retina	Physiology	
	Explain the significance of melanin pigment in retina	Physiology	
	Describe macula and foveal region of retina and their significance	Physiology	
	Describe the structure of rods and cones	Physiology	
	Comment on the location of optic disc and its significance	Physiology	
	Describe the cause, features, and treatment of retinal detachment	Physiology	
	Enlist the current investigations for Retinal Diseases	Integrate with Ophthalmology	
HNSS-P-006	Describe the rhodopsin-retinal visual cycle	Physiology	Photochemistry of vision
	Describe the mechanism of excitation of rods/ rods receptor potential	Physiology	
	Describe the causes and treatment of night blindness	Physiology	
HNSS-P-007	Define and describe different mechanisms of light adaptation	Physiology	Adaptation
	Define and describe different mechanisms of dark adaptation	Physiology	
	Enumerate the diseases leading to Night Blindness and retinal detachment	Integrate with Ophthalmology	
HNSS-P-	Explain the tri color mechanism of color	Physiology	Color vision

008	determination		
	Define term protanopes, deuteranopes, tritanopes	Physiology	
	Enlist the types of color blindness and their causes	Physiology	
	Enlist clinical features of Color vision deficiencies	Integrate with Ophthalmology	
HNSS-P-009	Trace the visual pathway	Physiology	Visual Pathways
	Enlist and describe the abnormalities of visual pathway & visual field		
	Explain the effect of removal of primary visual cortex		
HNSS-P-010	Define the physiological blind spot and describe its location	Physiology	Field of vision
	Define scotoma/ pathological blind spot and enlist causes	Physiology	
HNSS-P-011	Illustrate the abnormalities of field of vision	Integrate with Ophthalmology	Visual fields
HNSS-P-012	Describe the muscular and neural control of eye movements	Physiology	Eye movements
HNSS-P-013	Define and enlist the types of Strabismus	Integrate with Ophthalmology	Strabismus
HNSS-P-014	Explain the mechanism of accommodation	Physiology	Accommodation
	Enlist the components of near response in accommodation	Physiology	
	Describe the neural pathway for accommodation reflex	Physiology	
	Describe the regulation of accommodation	Physiology	
	Enlist the clinical features of Presbyopia	Integrate with Ophthalmology	
HNSS-P-015	Trace the neural pathway for pupillary light reflex	Physiology	Pupillary light reflex
	Explain the pupillary light reflexes or reactions in CNS diseases	Physiology	
	Describe the cause and features of Horner syndrome	Physiology	
	Illustrate the differential diagnosis of Anisocoria	Integrate with	

		Ophthalmology	
HNSS-P-016	Describe the physiological anatomy of outer and middle ear	Physiology	Sense of hearing
	Enlist the functions of middle ear	Physiology	
	Discuss clinical features and treatment of impacted wax	Integrate Otorhinolaryngology	
	Define causes and clinical features of Otomycosis	Integrate Otorhinolaryngology	
	Describe the mechanism of impedance matching and its significance	Physiology	
	Describe the mechanism of attenuation reflex and its significance	Physiology	
HNSS-P-017	Describe the physiological anatomy of inner ear	Physiology	Inner Ear/ Cochlea
	Describe the mechanism of transmission of sound waves in cochlea	Physiology	
HNSS-P-018	Describe the physiological anatomy and function of organ of Corti	Physiology	Organ of Corti
	Describe the mechanism of generation of endo-cochlear potential and its significance	Physiology	
HNSS-P-019	Write down the normal range of frequency for hearing	Physiology	Determination of sound frequency
	Describe the role of place principle in determination of sound frequency	Physiology	
	Describe the role of volleys principle in determination of sound frequency	Physiology	
HNSS-P-020	Trace the normal auditory nervous pathway	Physiology	Auditory pathway
	Describe the types of deafness	Physiology	
	Discuss the clinical features and investigations of Congenital and Acquired hearing loss	Integrate with Otorhinolaryngology	
HNSS-P-021	Enlist the primary taste sensations	Physiology	Sense of Taste
	Define and explain the term taste blindness	Physiology	

	Describe the physiological anatomy and location of taste buds	Physiology	
HNSS-P-022	Describe the mechanism of stimulation of taste buds/ receptor potential	Physiology	Excitation of Taste buds
	Trace the pathway of taste sensation	Physiology	
HNSS-P-023	Define and explain the terms: Ageusia, Hypergeusia, Hypogeusia and dysgeusia	Physiology	Abnormalities of Taste sensations
	Describe the senile changes in taste buds		
HNSS-P-024	Explain the terms: Taste preference and taste aversion	Physiology	Taste preference and aversion
HNSS-P-025	Enlist the primary sensations of smell	Physiology	Sense of smell
	Describe the physiological anatomy and location of olfactory membrane	Physiology	
HNSS-P-026	Enlist the causes and clinical features of Rhinitis	Integrate with Otorhinolaryngology	Rhinitis
	Differentiate between viral and allergic Rhinitis	Integrate with Otorhinolaryngology	
CODE	**MEDICAL BIOCHEMISTRY**	**TOTAL HOURS = 7**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
HNSS-B-001	Discuss the metabolism of mono and disaccharides	Biochemistry	Metabolism of mono and disaccharides
	Interpret Hereditary fructose intolerance, fructosuria, galactosemia and lactose intolerance, in relevance to the clinical findings	Biochemistry	
	Explain the Polyol pathway and effect of hyperglycemia on sorbitol pathway	Biochemistry	
	Discuss the sources, metabolically active forms, biochemical role and clinical correlation of Vit-A with vision	Biochemistry	
HNSS-B-002	Discuss biochemical basis and clinical aspects of Riboflavin	Biochemistry	Vitamins

HNSS-B-003	Discuss the sources, absorption, regulation, biomedical functions and clinical aspect of Zn, Fl	Biochemistry	Eye

PRACTICAL

CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 16+05=21	
		DISCIPLINE	TOPIC
HNSS-P-027	Examine the Second, Third, Fourth & Sixth Cranial Nerves	Physiology	Cranial Nerves
HNSS-P-028	Examination of Light Reflex		Light reflex
HNSS-P-029	Determine the Visual Acuity for Far and Near vision		vision
HNSS-P-030	Perform Ophthalmoscopy		ophthalmoscopy
HNSS-P-031	Examine Field of Vision and interpretation of visual field plotted	Physiology	Visual field
HNSS-P-032	Examine Color Vision		Color vision
HNSS-P-033	Perform Tuning fork test and audiometry, interpret the report		Ear
HNSS-B-004	Perform estimation of uric acid level in blood	Biochemistry	Uric acid level in blood
HNSS-B-005	Perform HbA1C by chromatographic method		HbA1C
HNSS-B-006	Detect abnormal constituents in urine by chemical methods		Abnormal constituents in urine

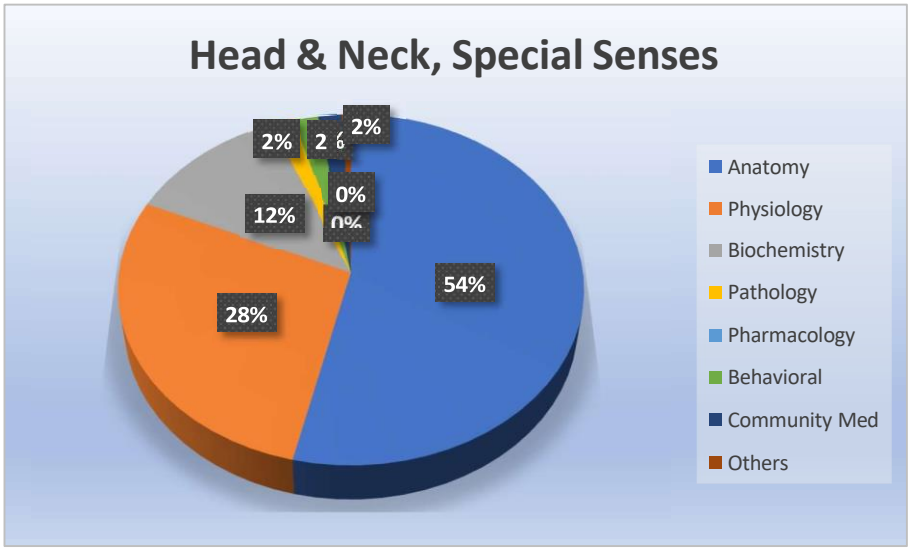
PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS

CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 09	
		DISCIPLINE	TOPIC
HNSS-Pa-001	Enlist the common causative agents of Eye, Ear infections	Pathology (Microbiology)	Eye/Ear infections
	Discuss the pathogenesis and clinical features of common pathogens	Pathology (Microbiology)	

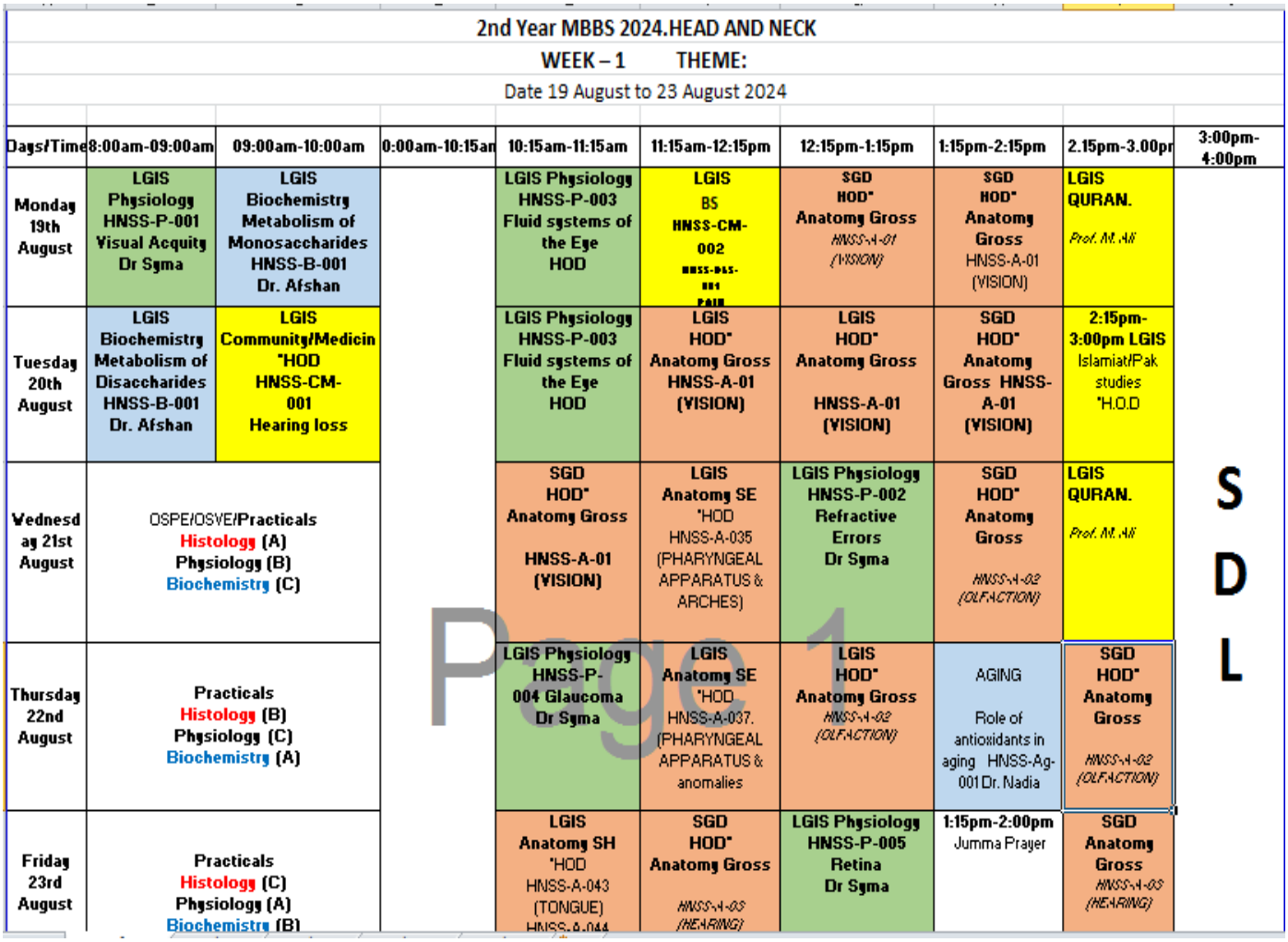
HNSS-B-004	Correlate proto-oncogene and oncogene concept with relevance of tumors	Biochemistry	Oncogenes
HNSS-B-005	Discuss tumor markers and their significance		Tumor markers
HNSS-B-006	Discuss the concept of xenobiotics		Genetics
	Explain and interpret pedigree of multifactorial mitochondrial disorder i.e. Libers hereditary optic neuropathy		

DISEASE PREVENTION AND IMPACT			
CODE	**SPECIFIC LEARNING OBJECTIVES**	**TOTAL HOURS = 07**	
		DISCIPLINE	**TOPIC**
HNSS-B-007	Explain the role of antioxidants (selenium (Se), Vit-E & C, Glutathione) in preventing oxidative stress	Biochemistry	Anti-oxidants
HNSS-CM-001	Identify factors leading to noise pollution	Community Medicine/ Otorhinolaryngology	Hearing loss
HNSS-CM-002	Describe the common causes of blindness in community	Community Medicine	Blindness
	Describe risk factors and preventive strategies for blindness at community level	Behavioral Sciences	
HNSS-BhS-001	At end of module the students will learn the psychosocial aspects of pain which will help in understanding the complex and multidimensional nature of pain.		Pain

AGING			
CODE	**SPECIFIC LEARNING OBJECTIVES**	**TOTAL HOURS = 03**	
		DISCIPLINE	**TOPIC**
HNSS-Ag-001	Identify the role of oxidative radicals and the process of lipid peroxidation that leads to aging	Biochemistry	Lipid oxidation
HNSS-Ag-002	Familiarize with the age-related hearing loss	Otorhinolaryngology	Deafness
HNSS-Ag-003	Discuss the age changes of mandible	Anatomy	Head & Neck



Module Weeks	Recommended Minimum Hours
05	164



2nd Year MBBS 2024.HEAD AND NECK

WEEK – 1 THEME:

Date 19 August to 23 August 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15an	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00pr	3:00pm-4:00pm
Monday 19th August	LGIS Physiology HNSS-P-001 Visual Acquity Dr Syma	LGIS Biochemistry Metabolism of Monosaccharides HNSS-B-001 Dr. Afshan		LGIS Physiology HNSS-P-003 Fluid systems of the Eye HOD	LGIS BS HNSS-CM-002 [illegible]	SGD HOD* Anatomy Gross HNSS-A-01 (VISION)	SGD HOD* Anatomy Gross HNSS-A-01 (VISION)	LGIS QURAN. Prof. M. Ali	
Tuesday 20th August	LGIS Biochemistry Metabolism of Disaccharides HNSS-B-001 Dr. Afshan	LGIS Community/Medicin *HOD HNSS-CM-001 Hearing loss		LGIS Physiology HNSS-P-003 Fluid systems of the Eye HOD	LGIS HOD* Anatomy Gross HNSS-A-01 (VISION)	LGIS HOD* Anatomy Gross HNSS-A-01 (VISION)	SGD HOD* Anatomy Gross HNSS-A-01 (VISION)	2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Wednesday 21st August	OSPE/OSVE/Practicals Histology (A) Physiology (B) Biochemistry (C)			SGD HOD* Anatomy Gross HNSS-A-01 (VISION)	LGIS Anatomy SE *HOD HNSS-A-035 (PHARYNGEAL APPARATUS & ARCHES)	LGIS Physiology HNSS-P-002 Refractive Errors Dr Syma	SGD HOD* Anatomy Gross HNSS-A-02 (OLFACTION)	LGIS QURAN. Prof. M. Ali	S D L
Thursday 22nd August	Practicals Histology (B) Physiology (C) Biochemistry (A)			LGIS Physiology HNSS-P-004 Glaucoma Dr Syma	LGIS Anatomy SE *HOD HNSS-A-037. (PHARYNGEAL APPARATUS & anomalies	LGIS HOD* Anatomy Gross HNSS-A-02 (OLFACTION)	AGING Role of antioxidants in aging HNSS-Ag-001 Dr. Nadia	SGD HOD* Anatomy Gross HNSS-A-02 (OLFACTION)	
Friday 23rd August	Practicals Histology (C) Physiology (A) Biochemistry (B)			LGIS Anatomy SH *HOD HNSS-A-043 (TONGUE) HNSS-A-044	SGD HOD* Anatomy Gross HNSS-A-03 (HEARING)	LGIS Physiology HNSS-P-005 Retina Dr Syma	1:15pm-2:00pm Jumma Prayer	SGD Anatomy Gross HNSS-A-03 (HEARING)	

2nd Year MBBS 2024. HEAD & NECK

WEEK – 2 THEME:

Date 26th August to 30th August 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15ar	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00p	3:00pm-4:00pm
Monday 26th August	TEST ANATOMY	LGIS Biochemistry HFI, Fructosuria, Lactose Intolerance HNSS-B-001 Dr. Afshan		LGIS Physiology HNSS-P-006 Photochemistry of vision HOD	LGIS Anatomy SH "HOD HNSS-A-045 (HEAD&NECK)	LGIS Physiology HNSS-P-005 Retina Dr Syma	LGIS Pathology HNSS-Pa-001 Eye & ear infection	SGD HOD" Anatomy Gross HNSS-A-04 (TASTE)	
Tuesday 27th August	LGIS Physiology HNSS-P-006 Photochemistry of vision HOD change lecture time please	LGIS Community/Medic "HOD HNSS-CM-001 Hearing loss		LGIS HOD" Anatomy SE HNSS-A-036. 038 (Tongue & thyroid gland pouches)	PBL HOD" Anatomy HNSS-A-04 (TASTE)	PBL HOD" Anatomy Gross HNSS-A-04 (TASTE)	LGIS Biochemistry Sorbitol pathway HNSS-B-001 Dr. Afshan	2:15pm-3:00pm LGIS Islamist/Pak studies "H.O.D	
Wednesday 28th August	Practicals Histology (A) Physiology (B) Biochemistry (C)			LGIS Pathology HNSS-Pa-001 Eye & ear infection	LGIS HOD" Anatomy SE HNSS-A-039 (Face & nasolacrimal duct)	LGIS Physiology HNSS-P-005 Retina Dr Syma	SGD HOD" Anatomy Gross HNSS-A-05 (SKULL)	LGIS QURAN. Prof. M. Ali	S D L
Thursday 29th August	Practicals Histology (B) Physiology (C) Biochemistry (A)			LGIS HOD" Anatomy SE HNSS-A-039 (Face & nasolacrimal duct)	SGD HOD" Anatomy Gross HNSS-A-05 (SKULL)	SGD /Museum HOD" Anatomy Gross HNSS-A-05 (SKULL)	Physiology HNSS-P-008 colour vision Dr Ujala	LGIS Pharmacology "HOD BIOCHEMISTRY HNSS-B-004 ONCOGENES	
Friday 30th August	Practicals Histology (C) Physiology (A) Biochemistry (B)			LGIS Physiology HNSS-P-007 Adaptation Dr Syma	LGIS Anatomy SH "HOD HNSS-A-046 (THYROID & PARATHYROID GLANDS)	SGD HOD" Anatomy GroSS HNSS-A-05 (SKULL)	1:15pm-2:00pm Jumma Prayer	LGIS AGING ENTHNSS-Ag-002 deafness	

2nd Year MBBS 2024. HEAD AND NECK

WEEK – 3 THEME:

Date 2nd September to 6th September 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00pm	3:00pm-4:00pm
Monday 2nd September	TEST Physiology	LGIS Biochemistry Vitamin A HNSS-B-001 Dr. Afshan		LGIS Physiology HNSS-P-009 Visual Pathway HOD	LGIS Anatomy SH *HOD HNSS-A-047 (EYE)	LGIS HOD* Anatomy Gross *HNSS-A-06 (SCALP)*	SGD HOD* Anatomy Gross HNSS-A-07 [Muscles of Facial expression] HNSS-A-08 [Neurovascular supply of Face]	LGIS Pathology HNSS-Pa-001 eye & ear infection	
Tuesday 3rd September	LGIS HOD* Anatomy HNSS-A-008 [Neurovascular supply of Face] HNSS-A-005 [Danger area on face]	LGIS Community/Medicine *HOD HNSS-CM-002 Blindness		LGIS Physiology HNSS-P-010 Field of Vision HOD	LGIS HOD* Anatomy SE HNSS-A-40 (Nose)	SGD HOD* Anatomy Gross *HNSS-A-10 (Mandible)*	LGIS Physiology HNSS-P-011 Abnormalities of field of vision	2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Wednesday 4th September	Practicals Histology (A) Physiology (B) Biochemistry (C)			LGIS Pathology HNSS-Pa-001 Eye & ear infection	LGIS HOD* Anatomy SE HNSS-A-041 (Lips & palate)	LGIS Physiology HNSS-P-007 Adaptation Dr Syma	SGD HOD* Anatomy Gross HNSS-A-10 Temporomandible joint	LGIS QURAN. *Prof. M. Ali*	S
Thursday 5th September	Practicals Histology (B) Physiology (C) Biochemistry (A)			LGIS Physiology HNSS-P-012 & 013 Eye Movements Dr Ujala	LGIS HOD* Anatomy SE HNSS-A-042 (Eye)	PBL HOD* Anatomy HNSS-A-11 (PAROTID GLAND)	PBL HOD* Anatomy HNSS-A-11 (PAROTID GLAND)	LGIS Pharmacology *HOD BIOCHEMISTRY HNSS-B-005 TUMOUR	D
Friday 6th September	Practicals (C) Physiology (A) Biochemistry (B)			LGIS Anatomy SH *HOD	LGIS HOD* Anatomy	LGIS Pathology HNSS-Pa-001 eye & ear infections	1:15pm-2:00pm Jumma Prayer	LGIS PERL *HOD	L

2nd Year MBBS 2024. Head and Neck

WEEK – 4 THEME:

Date 09th September to 13th September 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15an	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00pr	3:00pm-4:00pm
Monday 9th September	TEST Anatomy	LGIS Community/Medicine "HOD HNSS-CM-002 Blindness		LGIS Physiology HNSS-P-014 Accomodation HOD	LGIS Anatomy SH HNSS-A-047 (EYE) "HOD	SGD HOD" Anatomy Gross *HNSS-A-12,13 (Waldeyers ring)Hard & soft palate*	Museum HOD" Anatomy Gross	LGIS QURAN. *Prof. M. Ali*	
Tuesday 10th September	TEST Biochemistry	Biochemistry Riboflavin HNSS-B-002 Dr. Afshan		LGIS Physiology HNSS-P-014 Accomodation HOD	LGIS HOD" Anatomy SE HNSS-A-042 (Eye)	LGIS HOD" Anatomy Gross HNSS-A-15 (submandibular & otic ganglion)	SGD HOD" Anatomy Gross *HNSS-A-14 (Submandibular & lingual glands)*	2:15pm-3:00pm LGIS Islamiat/Pak studies "H.O.D	
Wednesday 11th September	Practicals Histology (A) Physiology (B) Physiology (C)			LGIS Physiology HNSS-P-016 Sense of hearing Dr Sara	LGIS HOD" Anatomy SE HNSS-A-042 (ear)	LGIS Physiology HNSS-P-015 Pupillary light reflex Dr Ujala	SGD HOD" Anatomy Gross *HNSS-A-16,17 (HYOID BONE) cervical vertebrae*	Museum HOD" Anatomy Gross *(CERVICAL VERTEBRAE)*	S D L
Thursday 12th September	Practicals Histology (B) Physiology (C) Physiology(A)			LGIS Pathology HNSS-Pa-001 eye & ear infection	LGIS HOD" Anatomy SE REVISION	LGIS Physiology HNSS-P-016 Sense of hearing Dr Sara	LGIS Pharmacology "HOD BIOCHEMISTRY HNSS-B-006 GENETICS	Biochemistry Role of Zinc HNSS-B-003 HNSS-B-007 Dr. Afshan	
Friday 13th September	Practicals Histology (C) Physiology (A) Physiology(B)			LGIS Anatomy SH "HOD HNSS-A-048 (EAR)	TBL HOD" Anatomy Gross HNSS-A-018 (Prevertebral muscles)	SGD HOD" Anatomy Gross. HNSS-A-019 (Deep cervical fascia) HNSS-A-020 (Facial spaces)	1:15pm-2:00pm Jumma Prayer	LGIS Physiology Practicle	

2nd Year MBBS 2024. Head & Neck

WEEK – 5 THEME:

Date 16th September to 20th September 2024

Days/Time	8:00am-09:00am	09:00am-10:00am	0:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-2:15pm	2.15pm-3.00pm	3:00pm-4:00pm
Monday 16th September	MODULE. TEST	MODULE. TEST		LGIS Physiology HNSS-P-017 Inner Ear/Cochlea HOD	LGIS HOD" Anatomy Gross HNSS-A-021 (Infrahyoid & suprahyoid muscles) HNSS-A-022 (Jaw arrangement)	SGD HOD" Anatomy Gross HNSS-A-023 (sternocleidomastoid& trapezius) HNSS-A-024 (Triangles of neck)	SGD HOD" Anatomy Gross HNSS-A-025 (Trachea &esophagus) HNSS-A-026 (Thyroid, Parathyroid	LGIS QURAN. Prof. M. Ali	
Tuesday 17th September	LGIS Community/Medicine "HOD HNSS-CM-002 Blindness	LGIS Pathology BIOCHEMISTRY HNSS-B-006 GENETICS		LGIS Physiology HNSS-P-018 Organ of Corti HOD	LGIS HOD" Anatomy SE REVISION	SGD HOD" Anatomy Gross HNSS-A-27,28, 29 (Carotid arteries & bodies, vascular supply)	Museum HOD" Anatomy Gross	LGIS Islamiat/Pak studies "H.O.D	
Wednesday 18th September	Practicals Histology (A) Physiology (B) CFRC (C)			LGIS Physiology HNSS-P-019 Determination of sound frequency Dr Sara	LGIS HOD" Anatomy Gross HNSS-A-30 (Lymphatics) HNSS-A-31 (Cervical plexus)	LGIS Physiology HNSS-P-020 Auditory pathway Dr Ujala	SGD HOD" Anatomy GROSS HNSS-A-32 (Pharynx)HNSS-A-34 (Tonsils)	Museum HOD" Anatomy Gross	S D L
Thursday 19th September	Practicals Histology (B) Physiology (C) CFRC(A)			SGD HOD" Anatomy Gross HNSS-A-33 (Larynx	SGD HOD" Anatomy Gross HNSS-A-33 (Larynx	LGIS Physiology HNSS-P-021-24 Sense of Taste Dr Syma	HOD" Anatomy. AGING HNSS-Ag-003 Head and neck	Biochemistry Role of Flourine HNSS-B-003 HNSS-B-007 Dr. Afshan	
Friday 20th September	Practicals Histology (C) Physiology (A) CFRC (B)			SGD HOD" Anatomy Gross REVISION Surface marking	SGD HOD" Anatomy Gross REVISION /Radiology	SGD HOD" Anatomy Gross REVISION /Radiology	1:15pm-2:00pm Jumma Prayer	LGIS Physiology HNSS-P-025 & 26 Sense of smell Dr Ujala	

C-FRC SCHEDULE FOR 2nd YEAR MBBS
SESSION 2023-2027

S. No	Week	Date/Time	Topic	Batch No	Venue	Facilitator	Log Book Entries
1.	Week 4	11-09-24 8.00.am-10.00am	Examination of neck lumps C-FRC	B	Biochemistry Lab	HOD *C-FRC In charge	3 Log book Entries
2.	Week 4	12-09-24 8.00.am-10.00am	Examination of neck lumps C-FRC	A	Biochemistry Lab	HOD *C-FRC In charge	3 Log book Entries
3.	Week 4	13-09-24 8.00.am-10.00am	Examination of neck lumps C-FRC	C	Biochemistry Lab	*HOD *C-FRC In charge	3 Log book Entries
4.	Week 5	18-09-24 8.00.am-10.00am	Examination of the nose C-FRC	C	ENT	*HOD *C-FRC In charge	2 Log book Entries
5.	Week 5	19-09-24 8.00.am-10.00am	Examination of the nose C-FRC	A	ENT	*HOD *C-FRC In charge	2 Log 2ook Entries
6.	Week 5	20-09-24 8.00.am-10.00am	Examination of the nose C-FRC	B	ENT	HOD *C-FRC In charge	2 Log book Entries

ASSESSMENT POLICY:

Second Professional examination will be held at the end of the Second year MBBS class as per University of Health Sciences schedule.

All students must prepare all the subjects, Anatomy (including Histology), Physiology, Biochemistry, Behavioral sciences, Community medicine & public health, Pathology, Pharmacology, mentioned as per above sections including clinical skills and PERL. The assessment will be held in all three blocks, which were taught during Second year MBBS.

1. There will be four papers in the first-year professional examination as per following:

a) Paper 01 will be based on contents of Block No. 04.

b) Paper 02 will be based on contents of Block No. 05.

c) Paper 03 will be based on contents of Block No. 06.

2. All papers will be based on written and Oral/Practical/Clinical examination except Islamic Studies, Ethics, Professionalism, and Pakistan Studies, which will be written only.

3. The written and Oral/Practical/Clinical examination will carry 150 marks each thus a total of 300 marks for each of the three block (Block No. 04, 05 & 06)
4. The total marks of second year MBBS will be 900 (300 marks of each block, 04, 05 & 06) .
5. Major component of the second will include:

- Anatomy including Applied and Clinical Anatomy.
- Physiology including Applied and Clinical Physiology.
- Biochemistry including Applied and Clinical Biochemistry.

6. The Applied and Clinical part of all the above three mentioned component will be based on Clinical correlations.
7. Minor Components of the year include Pathology, Pharmacology and Therapeutics, Community Medicine, Behavioral Sciences, Clinical Foundation 2 and PERL 2.
8. Written Examination:

- There will be one written paper for each of Paper 4, 5 & 6 of the Blocks.
- This written paper will be based on one best type MCQs (70%) and SEQs (30%).
- Each MCQ will have five options (One best option and four distractors) and each will carry 01 Mark.
- There will be no negative marking.
- There will be no sections of SEQs and each will carry 05 Marks.
- SEQs will only be from the major components of first year that is Anatomy, Physiology and Biochemistry.
- There will be total 85 MCQs and 07 SEQs in each of three Block papers that is Block 04, 05 & 06.
- The duration of written paper will be of 180 Minutes or 03 Hours.
- MCQs part will be of 110 Minutes and SEQs will be 70 Minutes.

1. Oral/Practical/Clinical Examination:

- There will an Oral/Practical and Clinical Examination of each paper 4, 5and 6 will consist of a total of twelve (12) OSPE/OSCE/OSVE Stations.

- There will be seven (7) OSPE (objectively structed practical examination) stations from major subject areas.
- There will be two (2) Observed OSCE (objectively structed clinical examination) stations based on C-FRC-2 and PERL-2.
- There will be three (3) Observed interactive OSVE (objectively structed viva examination) from major subject areas. Each OSVE station will have a structured viva to assess.
- Each OSPE/OSCE Observed station will carry 08 Marks.
- Each OSVE station will carry sixteen (16) Marks.
- Duration of Oral/Practical and Clinical Examination is 120 Minutes (2 Hours).
- Time for each OSPE/OSCE/OSVE station will be 08 Minutes.

2. Each student of Second Year MBBS will have to appear in Second Year Professional Examination as follows:

- Block No. 04 (GIT & Nutrition-1 + RENAL) 300 Marks.
- Block No. 05 (Endocrinology & Reproduction-1 + Head & Neck, Special Senses) 300 Marks.
- Block No. 06 (Neurosciences-1 + Inflammation) 300 Marks.

3. No grace marks shall be allowed either in written or practical examination.

4. At least 25% MCQs and 25% SEQ shall cover Applied Clinical Cases scenario to assess high order thinking of Second Year MBBS examination.

Block No. 05 (Endo & Reproduction + Head & Neck)

The examination of block no. 05 will be as follows:

I. One written paper of 120 Marks having following two parts:

a) Part I shall have eighty-five Multiple Choice Questions (MCQs) with 85 total marks (01 mark for each MCQ) and allocated time will be 110 Minutes.

b) Part II will have seven (7) Structured Essay Questions (SEQs) with 35 total marks (05 marks for each SEQ) and allocated time will be 70 Minutes.

c) Oral/Practical/Clinical Examination shall be of 120 marks.

d) The Continuous Internal Examination conducted by college of enrollment shall carry 60 marks (20% of the total 300 marks) of the Block. These 60 marks will be equally distributed for Written and Oral/Practical/Clinical Examination.

<table>
<tr><th colspan="7">YEAR II</th></tr>
<tr><th>Subject</th><th colspan="2">Theory</th><th colspan="3">Practical Marks</th><th>Total</th></tr>
<tr><td rowspan="4">Block 5
Modules</td><td>Part I MCQs (85)</td><td>85 marks</td><td>Practical/Clinical Examination</td><td>07 OSPE
02 OSCE
03 OSVE</td><td>56
16
48</td><td rowspan="4">300</td></tr>
<tr><td>Part II SEQs (7)</td><td>35 marks</td><td>Internal Assessment</td><td colspan="2">30 marks</td></tr>
<tr><td>Internal Assessment</td><td>30 marks</td><td rowspan="2">Total</td><td colspan="2" rowspan="2">150</td></tr>
<tr><td>Total</td><td>150</td></tr>
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BLOCK 5

Code	Domain	Attribute	Specific Learning Outcome	Topic	Portfolio Entry
PERLs-2-09	Professionalism	Responsible & Accountable	Write an anonymous report on a cheating incident in class during last year	Anonymity Misconduct	Report
PERLs-2-10			Actively demonstrate engagement in co-curricular and extracurricular activities	Advantages of co-curricular and extra-curricular activities in development of personality and social skills	Participating or organizing certificate in any of the activities
PERLs-2-11		Communicator	Write a dialogue between a senior doctor and a patient	Structure of a dialogue Formatting of a dialogue Role of a dialogue in creative writing	Dialogue
PERLs-2-12		Caring & Empathic	Demonstrate respect of diversity in children with disabilities	Special needs of children with disabilities Laws and regulations for supporting persons with disabilities The government facilities for children with disabilities Daily routine of the deaf and dumb children	Visit to an institution of deaf and dumb children and reflecting on the experience in terms of interacting with them
PERLs-2-13	Ethics	Ethical Practitioner	Obtain Informed Consent from a stable patient	Informed consent Designing an informed consent form	Teacher marked proforma of informed consent for taking blood pressure, temperature or pulse rate from a stable patient
PERLs-2-14	Research	Evidence Based	Develop the summary table of all the studies	Research designs Study types	Summary table of at least seven

		Researcher	identified after literature review on the topic	Hierarchy of evidence Critical appraisal	articles relevant to the problem
PERLs-2-15	Leadership	Self-Directed Learner	Set and track learning and improvement goals	Goal setting and Action planning in areas of research and biomedical ethics	Written Goals and action plan with milestones

REGULATION:

1. This examination shall be permitted to any students who:

a) Has been enrolled/registered and completed one academic year proceedings in a constituent or affiliated medical college of University of Health Sciences (UHS).
b) has his/her name been submitted for the purpose of examination to Registrar of UHS from Principal of constituent or affiliated medical college, where he /she is enrolled and eligible as per prerequisite of first year MBBS examination.
c) Has his/her marks of internal assessment of all the Blocks are submitted to Registrar of University of Health Sciences by the Principal of the college along with admission forms.
d) Produces the following certificates duly attested by the Principal of the medical college:
    i. Good Character.
    ii. Attendance Certificate having not less than **85%** attendance of full course in both lectures delivered and practical conducted in second year MBBS.
    iii. Certificate of having passed all the Block examinations conducted by the college of enrollment with **50%** cumulative percentage in aggregate of Block 4, 5 & 6 Second year.
    iv. Candidates failing short of attendance in lectures and practicals shall not be admitted to the annual examination. Student though will be allowed for next examination if they attend **85%** of lectures delivered and practical conducted before the commencement of next examination by remaining enrolled as regular student of the college.

2. The minimum passing marks shall be 50% in written and 50% in Oral/Practical/Clinical Examination and 50% as an aggregate, independently and concomitantly at one and the same time of Second year MBBS examination.
3. Candidates securing more than **85%** marks in any of Block will be declared as distinction in the Block subject he/she secured **80%** marks in written component of that paper. Similarly, If he/she does not pass in second year examination as a whole at and same time shall not be declared to have a distinction in single Block or paper.

4. Any candidate failing to clear one or more papers in annual examination shall be provisionally allowed to join third year. He/she must clear that failed paper in supplementary examination within 4 weeks' time frame, failing to do he/she will be detained back in second year. Under no circumstances he/she shall be promoted to third year MBBS profession until and unless he/she cleared the failed papers.
5. If a student appears by any chance for the first time in Supplementary examination as he/she did not appear in annual examination and failed to clear one or more papers shall be detained in same second year class, no provisional joining in next class shall be allowed.
6. Any student failed to clear second year MBBS in four consecutive attempts inclusive of availed or un-availed after being eligible for examination shall be expelled from college and shall not be allowed to continue MBBS or BDS studies in the college or shall not be allowed to get admission as fresh candidate in either MBBS or BDS. (**Ref**. UHS Circulars/137-20/2750 dated 23-11-2020).
7. The college may arrange remedial classes and one re-sit for each block examination, either with the subsequent block examination or before completion of subsequent block examination, and before or during preparatory leave for the terminal block of the professional year, before issuance of the date sheet for the concerned professional examination, subject to the following conditions:
    i. At the completion of each block, the principal of the college shall submit a detailed report to the university, including cases of the students with short attendance, poor performance / absence in the block examination along with the reasons and evidence for the same, proposed schedule for remedial classes and re-sit examinations.
    ii. Competent Authority UHS will have the cause and the submitted evidence evaluated and documented, before permitting the college to arrange remedial classes and re-sit examination at the concerned block. No college is allowed to conduct remedial classes and re-sit examinations without prior approval of the competent authority.
    iii. The students can appear in re-sit of a block examination along with the subsequent block examination and before or during preparatory leave for the terminal block of the professional year, once the requirement of attendance is met with. Remedial classes shall be permitted only for those students who shall have attended 50% of total attendance of the concerned block in the first instance.
    iv. The valid reason for short attendance in a block or absence from a block examination may include major illness/accident/surgery of the student or death of an immediate relative /being affiliated by a natural calamity or disaster.

8. Every candidate shall submit their admission to Registrar of UHS through Principal of the college where he/she is enrolled and completed Second year MBBS.
9. The marks of internal assessment shall be submitted to Controller of Examination of UHS within 02 weeks after completion of each Block 4, 5 & 6 examination. No Internal Assessment will be accepted after the commencement of annual examination.
10. Parent Teacher Meeting should be schedule after every Block to share the attendance, internal assessment and performance of the students with their parents and University of Health Sciences.

11. Fresh internal assessment for supplementary examination shall not be permissible. Revised internal assessment for detained students can be submitted. A proper continuous internal assessment record shall be maintained by respective departments of the medical college.
12. The candidates will submit their respective fee to UHS through Principal of their College. Principal will deposit student fees through bank draft or pay order or cross cheque in the name Treasurer University of Health Sciences along with admission forms.
13. Only one annual and one supplementary of first professional examination shall be allowed in a particular academic session. In exceptional situations, i.e. national calamities, war or loss of solved answer books in case of accident, special examination may be arranged. This will require permission of syndicate and board of governors.

MBBS 2nd Professional

BLOCK 5

Theme	Subject	Written Exam			Oral/Practical/Clinical Exam			
		MCQ (1 mark)	SEQ (5 mark each)	Marks	OSPE (8 marks each observed)	OSCE (8 marks each observed)	OSVE (16 marks each observed)	Marks
Normal Structure	Anatomy applied/clinical	30	04	50	04	-	01	48
Normal Function	Physiology applied/clinical	18	02	28	02	-	01	32
	Biochemistry applied/clinical	11	01	16	01	-	01	24
Disease Burden & Prevention	Community Medicine & Public Health	08	-	08	-	-	-	-
	Behavioral Sciences	04	-	04	-	-	-	-
Pathophysiology & pharmacotherapeutics	Pathology	12	-	12	-	-	-	-
	Pharmacology	02	-	02	-	-	-	-
CFRC	CF-2-2	-	-	-	-	01	-	08
PERLs	PERLs-2-2	-	-	-	-	01	-	08
Total		**85**	**7x5=35**	**120**	**07 stations x 08 = 56**	**02 stations x 08 = 16**	**03 stations x 16=48**	**120**

Academic Calendar 2nd Year
2024

BLOCK 4		4th March to 4th June 2024 (11 Wks + 1 wk Spring Break)
	Spring Break	3rd April to 9th April 2024; Eid ul fitr 10-12th April 24
1.	GIT & Nutrition Module (6wks)	4th March to 26th April 2024
	Major Module test	22nd April
	Minor Module Test	29th April
2.	Renal Module (4wks)	29th April to 24th May 2024.
	Major Module test	20th May 2024
	Minor Module test	24th May 2024
	Block 4 Exam (1wk)	27th May - 4th June 2024
	Written	30th May 2024
	OSPE/OSVE	3rd 4th June 2024
BLOCK 5		5th June to 1st Oct, 2024 (12 wks + 4wks Summer Break)
	Summer Break	16 June to 13th July 2024
1.	Endo, Repro & Genetics Module (7wks)	5th June to 16th August 2024
	Major Module test	12th August, 2024
	~~Minor Module test~~	~~16th August, 2024~~
2.	ead & Neck & Sp. Senses Module (5wks)	19th August – 20th September 2024
	Major Module test	16th September, 2024
	~~Minor Module test~~	~~20th September,, 2024~~
	Block 5 Exam (1wk)	23rd September-1st October 2024
	Written	26thSeptember, 2024
	OSPE/OSVE	30th September & 1st October 2024

BLOCK 6		2nd October-3rd December 2024 (9 Weeks)
1.	Neuro. Module (7wks)	2nd October to 15th November 2024
	Major Module test	**11th November, 2024**
	~~**Minor Module test**~~	~~**15th November, 2024**~~
2.	Inflammation Module (1wk)	18th-23rd November 2024
	Block 6 Exam (1wk)	30th November to 3rd December 2024
	Written	**28th November2024**
	OSPE/OSVE	**2nd 3rd December 2024**
Revision/Mock Tests		4th to 24th December 2024
Winter break/ PREPARATORY LEAVES (4wks)		25th December to 23rd January 2025
PROFESSIONAL EXAMS		24th January 2025 onwards

RESOURCE BOOKS:

Anatomy

- Snell's Clinical Anatomy 10th ed.
- Langman's Medical Embryology 12th ed
- Medical Histology by Laiq Hussain Siddiqui 8th ed.
- General Anatomy by Laiq Hussain Siddiqui 6th ed.

Physiology

- Guyton AC and Hall JE. Textbook of Medical Physiology. W. B. Sunders & Co., Philadelphia 14th Edition.
- Essentials of Medical Physiology by Mushtaq Ahmed

Biochemistry

- Harpers illustrated Biochemistry 32nd edition. Rodwell.V.W MCGrawHill publishers.
- Lippincott illustrated Review 8th edition Kluwer.W.
- Essentials of Medical Biochemistry vol 1&2 by Mushtaq Ahmed.

Pathology

- Vinary Kumar, Abul K. Abbas and Nelson Fausto Robbins and Cotran, Pathologic basis of disease. WB Saunders.
- Richard Mitchall, Vinary Kumar, Abul K. Abbas and Nelson Fausto Robbins and
- Cotran, Pocket Companion to Pathologic basis of diseases. Saunder Harcourt.
- Walter and Israel. General Pathology.
- Churchill Livingstone.

Medicine

- Davidson's Principles and Practice of Medicine

Pharmacology

- Basic and Clinical Pharmacology by Katzung, McGraw-Hill.
- Pharmacology by Champe and Harvey, Lippincott Williams & Wilkins

Behavioural Sciences

- Handbook of Behavioural Sciences by Prof. Mowadat H.Rana, 3rd Edition
- Medical and Psychosocial aspects of chronic illness and disability SIXTH EDITION by Donna R.Falvo, PhD Beverely E.Holland, PhD, RN

Community medicine

- Parks Textbook of Preventive and Social Medicine. K. Park (Editor)
- Public Health and Community Medicine

- Ilyas, Ansari (Editors)

Surgery

- Bailey and Love's short practice of surgery

Islamiyat

- Standard Islamiyat (compulsory) for B.A, BSc, MA, MSc, MBBS by Prof M Sharif Islahi.
- Ilmi Islamiyat(compulsory) for BA, BSc & equivalent.