Jinnah Medical & Dental College

Endocrine Module 1 & 2

Study Guide

MBBS
2022-23

Education is not the training of facts but the training of mind to think

Albert Einstein

VISION

To set local and global standards for quality patient outcomes – creating a culture of excellence to promote a transformative experience for the 21st century clinicians, educators and researchers to benefit all humanity.

MISSION

To develop well-rounded academicians, thinkers, clinicians and researchers by strengthening a global view, broadening intellectual foundations and teach effective communication. It is our aspiration to cultivate creative and critical thinking skills for problem solving, sensitive to cultural and ethical values and responsibilities. Our graduates will be role models and society leaders.

Team Members of Endocrine Module I &II 2022-23

Name	Committee	Department
Professor Dr. Muhammad Baqir Soomro	Member	Anatomy
Professor Dr. Shahid Ahsen	Member	Biochemistry
Professor Dr. Sadaf Fatima	Member	Physiology
Professor Dr. Sanowar Ali	Member	Community Medicine
Professor Dr. Ishaq Ghauri	Member	Medicine
Professor Dr. Mahdev Harani	Member	Pathology & Microbiology
Professor Dr. Bushra Rafique	Member	Pediatrics
Professor Dr. Samia Perwaiz Khan	Member	Pharmacology
Professor Dr. Farooq Umer	Member	Surgery
Dr. Zeelaf Shahid Associate Director	Member	Medical Education

Introduction

Greetings and a very warm welcome to medical students in the Endocrine module. This module has been developed to impart integrated teaching as a part of modular curriculum in Jinnah Medical & Dental College, Karachi. Endocrine 1 module (2nd year) is covered in 5 weeks and Endocrine 2 module (4th year) covered in 4 weeks.

Pakistan still have a long way to achieve adequate knowledge regarding prevalence and causes of common endocrine diseases. We still lack data on osteoporosis and fracture risk in our population. Polycystic ovarian syndrome remains a major concern for today's women. Sheehan syndrome is still not adequately documented. Iodine deficiency, short stature, hypothyroidism and other pituitary dis orders need to be explored further. This module will focus on the normal structure and function of the Endocrine system and will help students apply this information to solve clinically relevant problems suitable for this level of students.

Rationale

It is designed to provide students with not only knowledge about basics of Endocrine but also develop their ability to apply information to solve problems.

JMDC CURRICULUM SEQUENCE: MBBS 1-5 YEARS

Year 1	Module 1	EOM	Module 2	EOM	Module 3	EOM	Module 4	EOM	Module 5	EOM* Exam of Module	Final Exam
	Foundation-1 8 weeks		Blood-1 4 weeks		Locomotor-1 8 weeks		Respiratory-1 4 weeks		CVS-1 4 weeks		
	PAKISTAN STUDIES & ISLAMIAT										

2	Module 6	EOM	Module 7	EOM	Module 8	EOM	Module 9	EOM	Module 10	EOM	Module 11	EOM	Module 12	EOM
	GIT-1 4 weeks		Head & Neck-1 5 weeks		Neurosciences-1 7 weeks		Special Senses 3 weeks		Endocrine-1 5 weeks		Reproductive-1 4weeks		Urinary-1 5weeks	
	Communication Skills				Patient Safety & Infection Control						Professionalism & Ethics			

3	Module 13	EOM	Module14	EOM	Module15	EOM	Module16	EOM	Module17	EOM	Module 18	EOM
	Foundation 2 10 weeks		Blood-2 5weeks		Locomotor-2 4 weeks		Respiratory-2 4 weeks		CVS-2 5 weeks		GIT-2 7weeks	

Clinical Rotations (Each Batch) WT* = Ward test

Communication Skills — Patient Safety & Infection Control — Professionalism & Ethics

R1	Medicine 2 weeks	WT	Psychiatry 2weeks	WT	Surgery 2 weeks	WT	Orthopedics 2 weeks	WT	OBS/ GYN 2 weeks	WT	Pediatrics 2 weeks	WT	Eye 2 weeks	WT	Ent 3 weeks	WT
R2	Medicine 2 weeks		Psychiatry 2weks		Surgery 2 weeks		Orthopedics 2weeks		OBS/ GYN 2 weeks		Pediatrics 2 weeks		Eye 2 weeks		Ent 3 weeks	

4	Module 19	EOM	Module 20	EOM	Module 21	EOM	Module 22	EOM	Module 23	EOM	Module 24	EOM	Module 25	EOM	Module 26	EOM	Module 27	EOM
	Nervous Sys & Psychiatry 2 8 weeks		H & N & SP Senses 2 (Eye) 4 weeks		H & N & SP Senses 3 (ENT) 4 weeks		Endocrinology 2 4 weeks		Repro 2 6 weeks		Urinary 2 4 weeks		Derma 2 weeks		Orthopedics 2 weeks		Rehab 2 weeks	

Lectures Eye/ENT

Clinical Rotations (Each Batch)

Communication Skills — Patient Safety & Infection Control — Professionalism & Ethics

R1	Medicine 3 weeks	WT	Psychiatry 3 weeks	WT	Surgery 3 weeks	WT	Ortho pedics 3 weeks	WT	OBS/ GYN 3 weeks	WT	Pediatrics 3 weeks	WT	Eye 3 weeks	WT	Ent 3 weeks	WT

R2	Medicine 3weeks	WT	Surgery 3weeks	WT	Eye 3weeks	WT	Ent 3weeks	WT

LECTURES R***= Rotation

5	Medicine	Surgery	OBS/Gynae	Pediatrics
	Clinical Rotations			
	Communication Skills		Patient Safety & Infection Control	
R1	Medicine 4 weeks	Surgery 4 weeks	OBS/ GYN 4 weeks	Pediatrics 4 weeks
R2	Medicine 5 weeks	Surgery 5 weeks	OBS/ GYN 5 weeks	Pediatrics 5 weeks

Final Exam

Students Assessment

There will be an end of module/rotation test after completion of module/clinical posting which will comprise the following components: -

i. Written Assessment

The theory paper will have components of one – best type multiple – choice questions (MCQs).

ii. Practical / lab examination:

This will comprise Objective Structured Clinical Examination (OSCE) The OSCE will have both observed and non-observed stations. The end of clinical posting will be of 2 hours duration. This will comprise the following components:

The OSPE/ OSCE will be conducted in batches. The students will be having different patterns of OSPE/OSCE in the subject of both Basic & Clinical Sciences.

Summary of marks of each module exam

Theory (BCQs) = 100 marks

OSPE (10 stations) = 100 marks

Total = 200 marks

Internal Assessment:

• Continuous monitoring of attendance and practical assessment in short groups By

Mini CEX and logbooks.

• It may be in the form of MCQs (BCQs), Ward tests, and OSCE.

• Internal assessment carries 20% weightage

Course Evaluation:

Course evaluation will be obtained through a feedback form which will be posted on the JMC website

Mandatory Policy:

Eligibility for sitting in Professional Examinations is as follows:

- 75% overall Class Attendance
- 75% Attendance all Clinical Wards with passing marks in all Clinical Ward Tests.
- Minimum 40% aggregate marks on all Internal Examinations (Module Tests, Midterm, Pre-Professional Examinations)
- MBBS 1stYear: Complete all Professional Communication assignments with passing marks
- MBBS 1st& 2ndYear: Obtain passing marks in Behavioral Sciences & Research Module assessments
- MBBS 2ndYear: Presentation in Journal club at least twice in a year
- MBBS 4th& Final Year: CPC Presentation at least once in a year
- Skills Labs: Must be completed with passing marks
- Research Paper must be completed before MBBS 4 Professional Examination

Failure to Meet the Eligibility Requirements:

- A Student failing to meet the above listed eligibility for sitting in the professional examination will not be allowed to sit in 1st attempt of the Professional Examination.

  The college has the right to withhold all students who however, not met the eligibility requirements from sitting in the 1st attempt.
- Such students who have been withheld from sitting in the 1st attempt of the Professional exam because of failure to meet the eligibility requirements will be allowed only to sit in the retake of that examination.

  It is expected that deficiency in requirements of Professional communication assignments, Behavioral Sciences & Research Module assessments, journal Club presentations, CPC, Skills Labs must be made up and fulfilled before a student will allowed to sit in the retake exam.

Details of Attendance policy

The CR is responsible to bring attendance sheets from Student Affairs Office to each class. At the end of class, the attendance sheet must be signed and returned by the faculty member to the Student Affairs Office. No attendance sheets from students will be accepted.

These attendances will be compiled together as follows:

LECTURE ATTENDANCE = # Lectures Attended / Total # of Lectures

PRACTICAL ATTENDANCE = # Practical's Attended / Total # of Practical's

TUTORIAL ATTENDANCE = # Tutorials Attended / Total # of Tutorials

NOTE: All tutorials will be conducted by a Senior Faculty Member (AP or above), assisted by a Junior Faculty Member (Lecturer)

FINAL CLASS ATTENDANCE =

%Lecture Attendance + %Tutorial Attendance + %Practical Attendance

Teaching / Learning Methods

The teaching learning sessions of this module will be of diverse types:

a. Large group interactive sessions (LGIS)
b. Small group teaching will include tutorials and, case – based learning session.
c. Problem – based learning sessions.
d. Practical session will comprise sessions on early exposure to clinical methods and practical laboratory demonstrations.
e. Seminars: on different topics, in which students will make oral presentations on different aspects of the allocated topic.
f. Self-directed learning sessions: This is the time during which students are expected to revise what they have learnt in the class, clear their concepts by consulting different textbooks, reference material and prepare their assignments and projects.

Main Content Areas

Anatomy

- Anatomical overview of all endocrine glands in body
- Gross anatomy and development of the Pituitary gland
- Microscopic anatomy of the Pituitary gland
- Gross anatomy and development of the Thyroid and Parathyroid glands
- Microscopic anatomy of the Thyroid and Parathyroid glands
- Gross development of the Pancreas
- Microscopic anatomy of the Pancreas
- Gross anatomy and development of the Adrenal Gland
- Microscopic anatomy of the Adrenal Gland

Biochemistry

- Introduction to Hormones
- Hypothalamic Hormones
- Anterior Pituitary Hormones (Growth Hormone)
- Anterior Pituitary Hormones (ACTH, LH, FSH, TSH and PRL)
- Posterior Pituitary Hormones
- Thyroid Hormones
- Parathormone: Serum Calcium Regulation
- Pancreatic Hormones
- Blood Glucose Regulation
- Blood Glucose: Diabetes Mellitus (DM) and its complications
- Adrenal hormones: Glucocorticoids
- Adrenal hormones: Mineralocorticoids

Physiology

- Introduction to Endocrinology: Control and feedback of hormones
- Hypothalamus and anterior pituitary hormones
- Functions of Growth Hormone and associated disorders
- Hormones of Posterior Pituitary and related disorders
- Functions of Thyroid hormones
- Functions of Parathyroid (PTH) and Calcitonin hormone (Calcium homeostasis)
- Hormonal secretion of the Pancreas (Insulin)
- Hormonal secretion of the Pancreas (Glucagon, somatostatin)
- Adrenal cortex (Functions of Glucocorticoids)
- Adrenal cortex (Functions of Mineralocorticoids)
- Adrenal Medulla (secretion, function and disorders)

Community medicine

- Diabetes Mellitus (DM) & its prevention
- Iodine deficiency disorders & their prevention
- Obesity & its prevention

Medicine

- Hyperpituitarism and Acromegaly
- Hypopituitarism
- Hyperthyroidism
- Hypothyroidism
- Cushing's Syndrome
- Addison's disease
- Diabetes Mellitus

Pathology

- Overview of pituitary pathology
- Tumours of Pituitary
- Hyperthyroidism, Graves' disease & Goitres
- Hypothyroidism & Thyroiditis
- Tumours of Thyroid gland
- Pathology of Parathyroid gland
- Pathogenesis of Diabetes Mellitus (DM)
- Diabetes Mellitus: Pathogenesis of complications
- Adrenal gland- I
- Adrenal gland- II

Pediatrics

- Diabetes Mellitus (DM) & DK
- Hypo& hyperthyroidism
- Short stature & stunting

Pharmacology

- Pharmacology of Hypothalamic and Pituitary hormones
- Drugs used to treat hyperthyroidism
- Drug used to treat hypothyroidism
- Pharmacology of Adrenocorticoids
- Pharmacology of Oral Anti-Diabetic Drugs
- Insulin preparations

Surgery

- Thyroid Disorders

GENERAL LEARNING OBJECTIVES:

By the end of this module, the students will be able to:

Anatomy

Discuss Anatomical overview of all endocrine glands in body

- Explain Gross anatomy and development of the Pituitary gland
- Describe Microscopic anatomy of the Pituitary gland
- Explain Gross anatomy and development of the Thyroid and Parathyroid glands
- Describe Microscopic anatomy of the Thyroid and Parathyroid glands
- Explain Gross development of the Pancreas
- Describe Microscopic anatomy of the Pancreas
- Explain Gross anatomy and development of the Adrenal Gland
- Describe Microscopic anatomy of the Adrenal Gland

Biochemistry

- Describe Introduction to Hormones
- Discuss Hypothalamic Hormones
- Describe Anterior Pituitary Hormones (Growth Hormone)
- Explain Anterior Pituitary Hormones (ACTH, LH, FSH, TSH and PRL)
- Discuss Posterior Pituitary Hormones
- Explain Thyroid Hormones
- Describe Parathormone: Serum Calcium Regulation
- Discuss Pancreatic Hormones
- Explain Blood Glucose Regulation
- Discuss Blood Glucose: Diabetes Mellitus (DM) and its complications
- Describe Adrenal hormones: Glucocorticoids
- Explain Adrenal hormones: Mineralocorticoids

Physiology

- Describe Introduction to Endocrinology: Control and feedback of hormones
- Discuss Hypothalamus and anterior pituitary hormones
- Describe Functions of Growth Hormone and associated disorders
- Explain Hormones of Posterior Pituitary and related disorders
- Discuss Functions of Thyroid hormones
- Describe Functions of Parathyroid (PTH) and Calcitonin hormone (Calcium homeostasis)
- Describe Hormonal secretion of the Pancreas (Insulin)
- Discuss Hormonal secretion of the Pancreas (Glucagon, somatostatin)
- Explain Adrenal cortex (Functions of Glucocorticoids)
- Discuss Adrenal cortex (Functions of Mineralocorticoids)

- Describe Adrenal Medulla (secretion, function and disorders)

Community medicine

- Explain Diabetes Mellitus (DM) & its prevention
- Discuss Iodine deficiency disorders & their prevention
- Describe Obesity & its prevention

Medicine

- Describe Hyperpituitarism and Acromegaly
- Discuss Hypopituitarism
- Explain Hyperthyroidism
- Describe Hypothyroidism
- Discuss Cushing's Syndrome
- Explain Addison's disease
- Discuss Diabetes Mellitus

Pathology

- Describe Overview of pituitary pathology
- Discuss Tumours of Pituitary
- Explain Hyperthyroidism, Graves' disease & Goitres
- Discuss Hypothyroidism & Thyroiditis
- Describe Tumours of Thyroid gland
- Explain Pathology of Parathyroid gland
- Discuss Pathogenesis of Diabetes Mellitus (DM)
- Describe Diabetes Mellitus: Pathogenesis of complications
- Discuss Adrenal gland- I
- Explain Adrenal gland- II

Pediatrics

- Describe Diabetes Mellitus (DM) & DK
- Discuss Hypo& hyperthyroidism
- Explain Short stature & stunting

Pharmacology

- Explain Pharmacology of Hypothalamic and Pituitary hormones
- Discuss Drugs used to treat hyperthyroidism
- Describe Drug used to treat hypothyroidism
- Discuss Pharmacology of Adrenocorticoids
- Explain Pharmacology of Oral Anti-Diabetic Drugs
- Discuss Insulin preparations

Surgery

- Discuss Thyroid Disorder

Recommended Reading Material

Anatomy

A. GROSSANATOMY
1. K.L. Moore, Clinically Oriented Anatomy
2. Richard L. Drake, Gray's anatomy for students

B. HISTOLOGY
1. B. Young J. W. Health Wheather's Functional Histology
2. di Fiore's Atlas of histology and functional correlations

C. EMBRYOLOGY
1. Keith L. Moore. The Developing Human
2. Langman's Medical Embryology

Biochemistry

TEXT BOOKS
1. Harper's Illustrated Biochemistry
2. Lippincott's Illustrated reviews of Biochemistry
3. Lehninger's Principles of Biochemistry
4. Biochemistry by Devlin

Physiology

A. TEXTBOOKS
1. Textbook of Medical Physiology by Guyton And Hall
2. Human Physiology by Lauralee Sherwood
3. Berne & Levy Physiology
4. Best &Taylor Physiological Basis of Medical Practice

B. REFERENCEBOOKS
1. Ganong's Review of Medical Physiology

Community Medicine

- Public Health and Community Medicine by Shah Ilyas Ansari, 8th Edition
- Park's Textbook of Preventive and Social Medicine by K Park 24th Edition Epidemiology and Biostatistics:

- Epidemiology by Leon Gordis, Fifth Edition
- Basic Statistics for the Health Sciences by Jan W. Kuzma, Fifth Edition.

Forensic Medicine

- Gautam Biswas Book of Forensic Medicine
- Parikh's Book of Forensic Medicine

Pathology

- Basis of Pathology by Robbins & Cotran
- Review of Microbiology by Livingston

Pharmacology

- Katzung. Basic & Clinical Pharmacology. 14th Edition.
- Katzung & Trevor's. Pharmacology. 12th Edition.
- Rang & Dales. Pharmacology.

Endocrine Module 1

Organization

Time requirements:

• Anatomy	13 Hours
• Physiology	20 Hours
• Biochemistry	49 Hours
	82 Hours

Endocrine Module II

Time requirements:

• Community Medicine	3 Hours
• Medicine	6 Hours
• Pathology & Microbiology	21 Hours
• Pharmacology	4 Hours
• Pediatrics	3 Hours
• Surgery	1 Hours
	38 Hours

Total = 120 Hours

Endocrine Tract -1

Module

ANATOMY

LECTURES/ DEMONSTRATIONS

S. NO.	LEARNING OBJECTIVES By the end of the module, the students should be able to	Content	TEACHING Activity Duration	ASSESSMENT
1.	□ Classify the glands □ Define endocrine glands □ Describe the location of all endocrine glands in the body □ Discuss the functions of all endocrine organs in the body (K)	**Anatomical overview of all endocrine glands in body**	LGIS 50 Mins	MCQs & OSPE
2.	□ Describe the gross anatomical features, location, relations and external features, and division/components of pituitary gland □ Describe the neurovascular supply of pituitary gland □ Discuss the hypophyseal portal system □ Explain the development of pituitary gland □ Discuss the related clinical conditions & congenital anomalies of the pituitary gland (K)	**Gross and development of the Pituitary gland**	LGIS 50 Mins	MCQs& OSPE
3.	☐ Name different parts of adenohypophysis and neurohypophysis ☐ Discuss the histological features of adenohypophysis and neurohypophysis ☐ Explain the different cell types and functions of both parts of pituitary gland **(K)**	**Microscopic anatomy of the Pituitary gland**	LGIS 50 Mins	MCQs & OSPE
4.	□ Summarize the gross anatomical features, location, relations & neurovascular supply of thyroid gland □ Explain the embryological origin and development of the thyroid & parathyroid gland ☐ Discuss the developmental anomalies of the thyroid & parathyroid gland **(K)**	**Gross and development of the Thyroid and Parathyroid glands**	LGIS 50 Mins	MCQs& OSPE
5.	□ Explain the histological features of thyroid and parathyroid glands □ Discuss the types of cells found in the thyroid gland □ Discuss the clinical conditions in relation to thyroid gland □ Describe the cells found in parathyroid gland and their functions	**Developmental and microscopic anatomy of the Pancreas**	LGIS 50 Mins	MCQs& OSPE

	(K)			
6.	□ Summarize the gross anatomical features, location, relations & neurovascular supply of pancreas □ Describe the formation of dorsal and ventral pancreatic bud □ Discuss the development of main pancreatic duct. □ Explain the different congenital anomalies of pancreas **(K)**	**Gross and microscopic anatomy of the Adrenal Gland**	LGIS 50 Mins	MCQs& OSPE
7.	□ Discuss the histological components of pancreas □ Describe the histological details of parenchyma and lobules of pancreas □ Explain the histology of endocrine component of pancreas □ Discuss different cell types of endocrine pancreas and their functions **(K)**	**Development and anomalies of the Adrenal Gland**	LGIS 50 Mins	MCQs& OSPE
8.	☐ Describe the gross anatomical features and location, relations and neurovascular supply of the adrenal gland ☐ Discuss, of adrenal gland ☐ Discuss the clinical conditions in relation to adrenal gland ☐ Explain the embryological origin and development of the adrenal gland ☐ Discuss the developmental anomalies of the adrenal gland	**Gross and development of Adrenal Gland**	LGIS 50 Mins	MCQs& OSPE
9.	☐ Discuss the histological features of adrenal gland ☐ Describe the cells found in cortex and medulla ☐ Discuss the clinical conditions in relation to adrenal gland	**Microscopic anatomy of the Adrenal Gland**	LGIS 50 Mins	MCQs& OSPE

ANATOMY PRACTICALS

S. NO.	LEARNING OBJECTIVES	Content	TEACHING Activities (Duration)	ASSESSMENT
1.	☐ Identify the slide of Pituitary gland ☐ Describe the microscopic features of pituitary Gland ☐ Identify the slide of Thyroid and Parathyroid gland ☐ Discuss the microscopic features of Thyroid and Parathyroid gland **(S)**	**Histology of Pituitary gland**	Demonstrations 90 mins	OSPE
2.	☐ Identify the slide of Pancreas ☐ Explain the microscopic features of Pancreas ☐ Identify the slide of Adrenal gland ☐ Describe the microscopic features of Adrenal gland **(S)**	**Histology of Thyroid and Parathyroid gland**	Demonstrations 90 mins	OSPE

BIOCHEMISTRY LECTURES

S.NO.	LEARNING OBJECTIVES By the end of module, the students should be able to	Content	TEACHING Activities (Duration)	ASSESSMENT
1.	☐ Classify hormones according to the mechanism of action, and give examples ☐ Classify hormone receptors with examples ☐ Describe the role of second messenger system ☐ Summarize the hormones of the body with their function **(K)**	**Introduction to Hormones**	LGIS 50 Mins	MCQ's
2.	☐ List the hypothalamic hormones ☐ Explain the chemical structure and biochemical functions of Hypothalamic hormones ☐ List the stimulatory and inhibitory hypothalamic hormones ☐ Discuss the hypothalamic control of pituitary hormones ☐ Describe the feedback mechanism of hypothalamic hormones	**Hypothalamic Hormones**	LGIS 50 Mins	MCQ's

	☐ Describe the mechanism of circadian rhythm **(K)**			
3.	☐ List the anterior pituitary hormones ☐ Explain the chemical nature of growth hormone ☐ Explain the mechanism of action of growth hormone ☐ Discuss the synthesis and metabolic effects of growth hormone ☐ Discuss clinical complications and diseases associated with growth hormone **(K)**	**Anterior Pituitary Hormones (Growth Hormone)**	LGIS 50 Mins	MCQ's
4	☐ Explain the chemical structure of anterior pituitary hormones ☐ Describe the mechanism of action and biochemical functions of anterior pituitary hormones ☐ Discuss the hypothalamic control of pituitary hormones ☐ Discuss the regulation of anterior pituitary hormone ☐ Describe the clinical diseases associated with anterior pituitary hormones **(K)**	**Anterior Pituitary Hormones (ACTH, LH, FSH, TSH and PRL)**	LGIS 50 Mins	MCQ's
5	☐ List the posterior pituitary hormones ☐ Explain the synthesis chemical structure of posterior pituitary hormones ☐ Describe the mechanism of action, biochemical functions of posterior pituitary hormone ☐ Discuss the hypothalamic pituitary axis of posterior pituitary hormones ☐ Discuss the regulation of posterior pituitary hormone ☐ Describe the clinical diseases associated with posterior pituitary hormones **(K)**	**Posterior Pituitary Hormones**	LGIS 50 Mins	MCQ's
6	☐ List the Thyroid hormones ☐ Discuss the cells type and production of thyroid hormones ☐ Explain the synthesis and chemical structure of Thyroid hormones ☐ Describe the mechanism of action and metabolic functions of Thyroid hormones ☐ Discuss the hypothalamic pituitary axis of Thyroid hormones ☐ Discuss the regulation of Thyroid hormones and feedback mechanism ☐ Describe the clinical diseases and complication associated with Thyroid hormones **(K)**	**Thyroid Hormones**	LGIS 50 Mins	MCQ's
7	☐ List the pancreatic hormones (Insulin, glucagon and somatostatin) ☐ Explain the synthesis and chemical structure of pancreatic hormones ☐ Describe the mechanism of action, metabolic functions, and regulation of pancreatic hormones ☐ Describe the clinical diseases associated with pancreatic Hormones **(K)**	**Parathormone: Serum Calcium Regulation**	LGIS 50 Mins	MCQ's

8	☐ List the pancreatic hormones (Insulin, glucagon and somatostatin) ☐ Explain the synthesis and chemical structure of pancreatic hormones ☐ Describe the mechanism of action, metabolic functions, and regulation of pancreatic hormones ☐ Describe the clinical diseases associated with pancreatic hormones **(K)**	**Pancreatic Hormones**	LGIS 50 Mins	MCQ's
9	☐ Explain the regulation of blood glucose ☐ Discuss the tissues which regulate fuel metabolism in blood glucose level ☐ Describe the mechanism of metabolic regulation of blood glucose ☐ Discuss the biochemical complications of hypoglycaemia and hyperglycaemia **(K)**	**Blood Glucose Regulation**	LGIS 50 Mins	MCQ's
10	☐ Classify diabetes mellitus ☐ Differentiate between Type I and Type II diabetes mellitus ☐ Describe the biochemical causes of development of diabetes mellitus ☐ Discuss the factors responsible for metabolic changes in DM ☐ Discuss the clinical significance of diabetes mellitus and its complications ☐ Discuss the diagnostic investigations for diabetes mellitus **(K)**	**Blood Glucose: Diabetes Mellitus (DM) and its complications**	LGIS 50 Mins	MCQ's
11	☐ List the adrenal cortex hormones ☐ Explain the synthesis chemical structure of glucocorticoids ☐ Describe the mechanism of action and metabolic functions of glucocorticoids ☐ Discuss the regulation of glucocorticoids ☐ Describe the clinical diseases and complications associated with glucocorticoids **(K)**	**Adrenal hormones: Glucocorticoids**	LGIS 50 Mins	MCQ's
12	☐ Explain the synthesis chemical structure of mineralocorticoids ☐ Describe the mechanism of action, metabolic functions, and regulation of mineralocorticoids ☐ Describe the clinical diseases and complication associated with mineralocorticoids **(K)**	**Adrenal hormones: Mineralocorticoids**	LGIS 50 Mins	MCQ's
13	☐ List the adrenal medullary hormones ☐ Explain the synthesis and chemical structure of adrenal medullary hormones ☐ Describe the mechanism of action and metabolic functions of adrenal medullary hormones ☐ Discuss the regulation of adrenal medullary hormones ☐ Describe the clinical diseases and complication associated with adrenal medullary hormones **(K)**	**Adrenal hormones: Adrenal medullary hormones**	LGIS 50 Mins	MCQ's

14	☐ Explain the synthesis chemical structure of mineralocorticoids ☐ Describe the mechanism of action, metabolic functions, and regulation of mineralocorticoids ☐ Describe the clinical diseases and complication associated with mineralocorticoids **(K)**	**Adrenal hormones: Mineralocorticoids**	LGIS 50 Mins	MCQ's
15.	☐ List the adrenal medullary hormones ☐ Explain the synthesis and chemical structure of adrenal medullary hormones ☐ Describe the mechanism of action and metabolic functions of adrenal medullary hormones ☐ Discuss the regulation of adrenal medullary hormones ☐ Describe the clinical diseases and complication associated with adrenal medullary hormones **(K)**	**Adrenal hormones: Adrenal medullary hormones**	LGIS 50 Mins	

BIOCHEMISTRY

TUTORIALS

S. NO.	LEARNING OBJECTIVES	Content	TEACHING Activities (Duration)	ASSESSMENT
1.	☐ Discuss the clinical importance of Pituitary hormones ☐ Correlate the laboratory investigations with relevant clinical conditions **(K)**	**Pituitary hormones (Gigantism, Acromegaly, Dwarfism etc)**	SGD 90 mins	MCQ's
2	☐ Discuss the clinical importance of thyroid & adrenal hormones ☐ Correlate the laboratory investigations with relevant clinical conditions **(K)**	**Thyroid & adrenal hormones (Goiter, Hypothyroidism & Hyperthyroidism, Addison's diseases etc.)**	SGD 90 mins	MCQ's
3	☐ Discuss the clinical importance of pancreatic hormones ☐ Correlate the laboratory investigations with relevant clinical conditions **(K)**	**Pancreatic hormones**	SGD 90 mins	MCQ's
4	☐ Enumerate the biochemical tests to detect Diabetes Mellitus ☐ Describe the diagnostic criteria of Diabetes correlated with their laboratory investigations **(K)**	**Diabetes Mellitus Tests**	SGD 90 mins	MCQ's

BIOCHEMISTRY PRACTICALS

S. NO.	LEARNING OBJECTIVES	Content	TEACHING Activities (Duration)	ASSESSMENT
1.	□ Identify the chemical tests and bio-techniques to estimate the functions of the thyroid glands □ Correlate the laboratory investigations with relevant clinical conditions **(K)**	**Thyroid function tests**	Demonstration 90 mins	OSPE
2	□ Enumerate the chemical tests to detect diabetes mellitus □ Describe the diabetes diagnostic criteria □ Outline the method for estimation of blood glucose by glucometer □ Describe the principle of glucometer □ Perform blood glucose estimation by glucometer □ Correlate the laboratory investigations with relevant clinical conditions **(K)**	**Blood glucose estimation by glucometer**	Demonstration 90 mins	OSPE
3	□ Explain the significance of OGTT and glucose challenge tests (GCT) □ Explain the method of performance of OGTT and GCT □ Perform OGTT and GCT □ Interpret the results of Oral Glucose Tolerance Test & GCT □ Estimate urine glucose with urine glucose reagent strip □ Correlate the laboratory investigations with relevant clinical conditions **(K)**	**Oral Glucose Tolerance Test (OGTT)**	Demonstration 90 mins	OSPE

PHYSIOLOGY LECTURES

S. NO.	LEARNING OBJECTIVES	Content	TEACHING Activities (Duration)	ASSESSMENT
1.	☐ Define hormone, target cell and receptor ☐ Contrast the term endocrine, paracrine and autocrine ☐ Classify hormones ☐ Describe the concept of second messenger ☐ Explain the principles of negative and positive feedback of hormonal secretion (K)	**Introduction to Endocrinology: Control and feedback of hormones**	LGIS 50 Mins	MCQ's

2.	□ Name hypothalamic factors that control secretion of anterior pituitary hormones □ Name various cells of anterior pituitary responsible for synthesis of hormones □ Describe the functions and regulation of GH, FSH, LH, ACTH, TSH and prolactin □ Explain the hypothalamic hypophyseal portal System (K)	**Hypothalamus and anterior pituitary hormones**	LGIS 50 Mins	MCQ's
3.	□ Describe the functions and regulation of grown hormone □ Describe the disorders associated with hypo and hyper secretion of GH **(K)**	**Functions of Growth Hormone and associated disorders**	LGIS 50 Mins	MCQ's
4.	□ Describe the secretion of oxytocin and ADH □ Explain the mechanism of action and regulation of oxytocin and ADH **(K)**	**Hormones of Posterior Pituitary and related disorders**	LGIS 50 Mins	MCQ's
5.	□ Explain the formation and secretion of T3 and T4 □ Discuss the importance of iodine metabolism and iodine pump □ Describe actions of thyroid hormone on development and metabolism and associated disorders □ Describe the role of Thyroid stimulating hormone (TSH) on thyroid hormone regulation **(K)**	**Functions of Thyroid hormones**	LGIS 50 Mins	MCQ's
6.	□ Describe the synthesis of parathyroid and calcitonin hormone □ Explain the effects of parathyroid hormone on calcium balance □ Describe the factors that regulate the activities of osteoclasts and osteoblasts □ Describe the relationship between PTH and active form of vit D □ Explain the regulation of calcitonin secretion □ List the disorders associated with calcium homeostasis (tetany, Chovstek's sign) **(K)**	**Functions of Parathyroid (PTH) and Calcitonin hormone (Calcium homeostasis)**	LGIS 50 Mins	MCQ's
7.	□ Explain the synthesis of insulin □ Describe the insulin receptor □ Explain the role of insulin in maintaining blood glucose concentration □ Differentiate between neurogenic and nephrogenic diabetes insipidus **(K)**	**Hormonal secretion of the Pancreas (Insulin)**	LGIS 50 Mins	MCQ's
8.	□ Describe principal actions of glucagon and its regulation □ Explain the functions of somatostatin on blood glucose **(K)**	**Hormonal secretion of the Pancreas (Glucagon, somatostatin)**	LGIS 50 Mins	MCQ's

9.	Explain the synthesis of glucocorticoid hormones Identify the actions of glucocorticoids on metabolism and target cells Discuss the mechanism for regulation of glucocorticoid secretion Describe the disorders associated with glucocorticoid hormones (Addison's disease, Cushing syndrome) **(K)**	**Adrenal cortex (Functions of Glucocorticoids)**	LGIS 50 Mins	MCQ's
10.	Define Aldosterone escape, Primary Aldosteronism and Andro genital Syndrome Explain the mechanism of action of mineralocorticoids Discuss the mechanism of actions of aldosterone and its regulation **(K)**	**Adrenal cortex (Functions of Mineralocorticoids)**	LGIS 50 Mins	MCQ's
11.	Explain the mechanism of secretion and actions of medullary hormones List the types of adrenergic receptors and their functions on target organs Enumerate consequences of over and under secretion of medullary hormones (pheochromocytoma) **(K)**	**Adrenal Medulla (secretion, function and disorders)**	LGIS 50 Mins	MCQ's

Week 5

End of Module

Endocrine Module 1 Test Theory

Endocrine Module 1 Test OSCE

Endocrine

Module II

Community Medicine Lectures

S No	Learning Objectives By the end of the session, students will be able to:	Content Areas	Learning Activity (Duration)	Assessment
1.	☐ Describe Diabetes mellitus ☐ Explain the risk factors and complications of DM ☐ Discuss preventive measures of Diabetes Mellitus **(K)**	**Diabetes Mellitus (DM) & its prevention**	LGIS 50mins	MCQs
2.	☐ Describe iodine deficiency ☐ Explain the effects of iodine deficiency ☐ Discuss the preventive measures of iodine deficiency ☐ Explain the fortification of iodine in food **(K)**	**Iodine deficiency disorders & their prevention**	LGIS 50mins	MCQs
3.	☐ Describe Obesity ☐ Discuss the epidemiology of Obesity ☐ Enumerate the different methods to measure Obesity ☐ Explain control measures of Obesity **(K)**	**Obesity & its prevention**	LGIS 50mins	MCQs

Medicine Lectures

S No	Learning Objectives By the end of the session, students will be able to:	Content Areas	Learning Activity (Duration)	Assessment
1.	☐ Discuss aetiology, pathophysiology, risk factors and clinical features ☐ List the differential diagnoses. ☐ Interpret the relevant investigations. ☐ Discuss the plan of management for the condition **(K)**	**Hypopituitarism**	LGIS 50mins	MCQs
2.	☐ Discuss aetiology, pathophysiology, risk factors and clinical features ☐ List the differential diagnoses. ☐ Interpret the relevant investigations. ☐ Discuss the plan of management for the condition **(K)**	**Hyperpituitarism and Acromegaly**	LGIS 50min	MCQs

3.	☐ Discuss aetiology, pathophysiology, risk factors and clinical features ☐ List the differential diagnoses. ☐ Interpret the relevant investigations. ☐ Discuss the plan of management for the condition ☐ Explain the complications of the condition **(K)**	**Hyperthyroidism**	LGIS 50min	MCQs
4.	☐ Discuss aetiology, pathophysiology, risk factors and clinical features ☐ List the differential diagnoses. ☐ Interpret the relevant investigations. ☐ Discuss the plan of management for the condition ☐ Explain the complications of the condition **(K)**	**Hypothyroidism**	LGIS 50min	MCQs
5.	☐ Discuss aetiology, pathophysiology, risk factors and clinical features ☐ List the differential diagnoses. ☐ Interpret the relevant investigations. ☐ Discuss the plan of management for the condition ☐ Explain the complications of the condition **(K)**	**Cushing's Syndrome**	LGIS 50min	MCQs
6.	☐ Discuss aetiology, pathophysiology, risk factors and clinical features ☐ List the differential diagnoses. ☐ Interpret the relevant investigations. ☐ Discuss the plan of management for the condition ☐ Explain the complications of the condition **(K)**	**Addison's disease**	LGIS 50min	MCQs
7.	☐ Discuss aetiology, pathophysiology, risk factors and clinical features ☐ List the differential diagnoses. ☐ Interpret the relevant investigations ☐ Discuss the plan of management for the condition **(K)**	**Diabetes Mellitus**	LGIS 50min	MCQs

Paediatrics Lectures

S No	Learning Objectives By the end of the session, students will be able to:	Content Areas	Learning Activity (Duration)	Assessment
1.	☐ List the causes of diabetes mellitus in infants and children ☐ Describe the aetiology, risk factors, sign and symptoms, investigations, management and complications of DM in infants and children **(K)**	**Diabetes Mellitus (DM) & DK**	SGDs 1hour (Tutorials)	MCQs
2.	☐ Describe the aetiology, clinical presentation, investigations, management and complications of hyperthyroidism and hypothyroidism in infants and children **(K)**	**Hypo& hyperthyroidism**	SGDs 1hour (Tutorials)	MCQs
3.	☐ Define short stature and stunting ☐ Describe the aetiology, risk factors, sign and symptoms, investigations, management and complications of short stature and stunting **(K)**	**Short stature & stunting**	SGDs 1hour (Tutorials)	MCQs

Pathology Lectures

S No	Learning Objectives By the end of the session, students will be able to:	Content Areas	Learning Activity (Duration)	Assessment
1.	□ Discuss the pituitary gland function and hormone secretion □ Discuss the hypothalamus pituitary axis □ Discuss the clinical manifestations of Pituitary diseases □ Discuss the aetiology, clinical manifestations of hypopituitarism □ Discuss the posterior pituitary syndrome including Diabetes Insipidus & SIADH **(K)**	**Overview of pituitary pathology**	LGIS 50min	MCQs
2.	☐ Classify anterior pituitary tumours. ☐ Discuss aetiology, genetic alterations, morphology, and clinical manifestations of different types of adenomas ☐ Discuss Hypothalamic suprasellar tumours **(K)**	**Tumours of Pituitary**	LGIS 50min + Demonstration 90 mins	MCQs + OSPE
3.	☐ Define hyperthyroidism & thyrotoxicosis ☐ Discuss important causes of thyrotoxicosis ☐ Classify disorders associated with thyrotoxicosis ☐ Discuss clinical features and lab diagnosis of thyrotoxicosis ☐ Define Graves' disease ☐ Discuss the pathogenesis, morphology and clinical course of Graves disease ☐ Define Goitres ☐ Classify Goitres ☐ Discuss the aetiology, pathogenesis and clinical aspects of diffuse and multinodular goitres **(K)**	**Hyperthyroidism, Graves' disease & Goiters**	LGIS 50min + Demonstration 90 mins	MCQs + OSPE
4.	☐ Define hypothyroidism ☐ Discuss congenital, autoimmune and iatrogenic hypothyroidism ☐ Differentiate between cretinism & myxoedema with regards to aetiology, pathogenesis, clinical features & lab diagnosis ☐ Define thyroiditis and list different types of thyroiditis ☐ Discuss the aetiology, pathophysiology, morphology & clinical features of various types of clinically significant thyroiditis **(K)**	**Hypothyroidism & Thyroiditis**	LGIS 50min + Demonstration 90 mins	MCQs + OSPE
5.	☐ Classify Thyroid tumours ☐ Discuss the aetiology, pathogenesis, genetic alterations, morphology and diagnostic features of follicular, papillary, anaplastic and medullary thyroid carcinomas **(K)**	**Tumours of Thyroid gland**	LGIS 50min + Demonstration 90 mins	MCQs + OSPE

6.	☐ Discuss the functions of parathyroid gland ☐ Discuss primary hyperparathyroidism with reference to parathyroid adenoma, primary hyperplasia and parathyroid carcinoma ☐ Discuss the causes, pathogenesis, morphology and clinical features of primary hyperparathyroidism ☐ Discuss the causes of hypercalcemia with relation to parathyroid levels ☐ Discuss the diagnostic features of asymptomatic and symptomatic hyperparathyroidism ☐ Discuss the causes, pathogenesis, morphology and clinical features of secondary Hyperparathyroidism **(K)**	**Pathology of Parathyroid gland**	LGIS 50min + Demonstration 90 mins	MCQs + OSPE
7.	☐ Define Diabetes Mellitus (DM) ☐ Classify DM ☐ Discuss the diagnostic criteria of type I & II Diabetes Mellitus ☐ Differentiate between salient features of type I & II Diabetes Mellitus ☐ Discuss glucose homeostasis & regulation of insulin release ☐ Explain the pathogenesis of Type I & type II diabetes, related to beta cell dysfunction, genetic susceptibility, environmental factors ☐ Discuss Diabetes in pregnancy **(K)**	**Pathogenesis of Diabetes Mellitus (DM)**	LGIS 50min + Demonstration 90 mins	MCQs + OSPE
8.	☐ Discuss the morphology & clinical features of type I & II Diabetes including classic triad & chronic manifestations ☐ Elaborate the acute metabolic complications & Ketoacidosis. ☐ Explain the morphology and clinical features of chronic complications of Diabetes, including lesions of Pancreas, diabetic macrovascular disease, diabetic microangiopathy, nephropathy, neuropathy, diabetic ocular complications & susceptibility to infections **(K)**	**Diabetes Mellitus: Pathogenesis of complications**	LGIS 50min + Demonstration 90 mins	MCQs + OSPE
9.	☐ Discuss the function and hormone secretion of adrenal cortex and medulla ☐ Discuss the aetiology, pathophysiology and histopathology of hypercortisolism, hyperaldosteronism and adrenal adenoma ☐ Discuss adrenogenital syndrome **(K)**	**Adrenal gland- I**	LGIS 50min + Demonstration 90 mins	MCQs + OSPE
10.	☐ Discuss aetiology, pathophysiology and histopathology of adrenocortical insufficiency including Primary acute adrenocortical insufficiency, Waterhouse-Friderichsen syndrome & Addison disease & secondary adrenocortical insufficiency. ☐ Discuss pathogenesis, morphology, clinical presentation of tumours of adrenal cortex and adrenal medulla. ☐ Discuss MEN syndrome Type I & Type II **(K)**	**Adrenal gland- II**	LGIS 50min + Demonstration 90 mins	MCQs + OSPE

Pathology Tutorials

S No	Learning Objectives By the end of the session, students will be able to:	Content Areas	Learning Activity (Duration)	Assessment
1.	☐ Discuss morphological aspects of different types of goitres, cretinism, myxoedema, thyrotoxicosis, Graves' disease, thyroiditis and Thyroid tumours **(K)**	**Histopathology of Thyroid**	SGDs 1hour (Tutorials)	MCQs
2.	☐ Interpret the lab tests associated with diseases of Hypothalamus, Thyroid, Parathyroid, Pancreas and adrenal glands **(K)**	**Lab evaluation of endocrine diseases**	SGDs 1hour (Tutorials)	MCQs

Pathology Practical's

S No	Learning Objectives By the end of the session, students will be able to:	Content Areas	Learning Activity (Duration)	Assessment
1.	☐ Discuss in detail the classification and clinical presentation of benign and malignant goitres ☐ Suggest the diagnostic modalities for these conditions ☐ Enumerate the treatment options for goitre ☐ Propose a management plan for goitre and its complications	**Thyroid Disorders**	Demonstration 90 mins	OSPE

Pharmacology Lectures

S No	Learning Objectives By the end of the session, students will be able to:	Content Areas	Learning Activity (Duration)	Assessment

1.	☐ Discuss the basic & clinical aspects of the relevant drugs, leading to clarification of the concepts **(K)**	**Pharmacology of Hypothalamic and Pituitary hormones**	LGIS 50mins	MCQs
2.	☐ Classify anti-thyroid drugs. ☐ Discuss basic & clinical pharmacology of the anti-thyroid drugs **(K)**	**Drugs used to treat hyperthyroidism**	LGIS 50mins	MCQs
3.	☐ Explain kinetics & dynamics of the drugs used to treat hypothyroidism **(K)**	**Drug used to treat hypothyroidism**	LGIS 50mins	MCQs
4.	☐ Classify corticosteroids ☐ Explain their functions ☐ Distinguish kinetics and dynamics of glucocorticoids and mineralocorticoids ☐ Discuss their inhibitors of glucocorticoids and mineralocorticoids **(K)**	**Pharmacology of Adrenocorticoids**	LGIS 50mins	MCQs
5.	☐ Classify Anti-Diabetic drugs ☐ Explain basic & clinical pharmacology of the Anti-Diabetic drugs **(K)**	**Pharmacology of Oral Anti-Diabetic Drugs**	LGIS 50mins	MCQs
6.	☐ Discuss basic and clinical pharmacology of insulin preparations including new ones **(K)**	**Insulin preparations**	LGIS 50mins	MCQs

Pharmacology Tutorials

S No	Learning Objectives By the end of the session, students will be able to:	Content Areas	Learning Activity (Duration)	Assessment
1.	☐ Discuss the basic & clinical aspects of the hyper and hypothyroidism **(K)**	**Drugs used in hyper and hypothyroidism**	SGDs 1hour (Tutorials)	MCQs
2.	☐ **Discuss the basic & clinical aspects of the relevant drugs** **(K)**	**Adrenocorticoids and their clinical uses**	SGDs 1hour (Tutorials)	MCQs
3.	☐ **Discuss the basic & clinical aspects of the Anti-Diabetic drugs** **(K)**	**Oral Anti-Diabetic drugs**	SGDs 1hour (Tutorials)	MCQs
	☐ **Discuss basic and clinical pharmacology of insulin preparations including new ones** **(K)**	**Insulin preparations**	SGDs 1hour (Tutorials)	MCQs

Week 5

End of Module

Endocrine Module II Test Theory

Endocrine Module II Test OSCE

Medical Education Lectures/Workshop

S.NO	Learning Objectives (domain) At the end of session, student will be able to:	Content Areas	Teaching Activity (Duration)	Assessment
1.	**Introduction to Medical Education** • Appreciate the journey of medical education from learning biomedical to clinical science. **(K)**	• Plan of medical education in college • Organization of undergraduate medical curriculum • Integrated Curriculum	LGIS 50 mins	–
2.	**Skills of Succeeding in a Medical College – 1** • Describe the methods of learning knowledge in a medical college. **(K)**	• Difference in teaching and learning in school / college and a medical institution • Learning knowledge • Learning skills	LGIS 50 mins	–
3.	**Problem – based Learning** • Describe the basis of problem – based learning. **(K)** • Follow the process / steps of problem – based learning session. **(S)**	• Basics of problem-based learning • Process / steps of problem – based learning • Practical demonstration of PBL session	Workshop (2 hours)	–
4.	**Medical Professionalism** • Describe the basics of medical professionalism and outline the behavioral descriptors of students. **(K)**	• History of medical professionalism • Principals of medial professionalism • Behaviors required from medical students	LGIS 50 mins	–

Learning resource: How to succeed at medical school, Dason Evans & Jo Brown, 2009

TIME TABLES

Jinnah Medical & Dental College

MBBS 2 (Batch 24) - 2022

ENDOCRINE MODULE – WEEK 1

Venue: LH102

MON July 25	8:30-10:00 BIOSTATISTICS MODULE TEST Community Medicine			10:30-11:00 MEDICAL EDUCATION Special Senses Exam Review Dr. Sara	11:05-11:55 ANATOMY Overview Endocrine Glands	12:00-12:50 BIOCHEMISTRY Hormone Introduction		SELF STUDY / EXTRA CURRICULAR ACTIVITIES	1:45-3:15 PBL 1.1 A: SR104 D: SR302 B: SR105 E: SR303 C: SR106 F: SR305		
TUES July 26	8:30-9:20 PHYSIOLOGY Endocrinology Introduction: Control & Feedback Dr. Sulail	9:25-10:15 BIOCHEMISTRY Hypothalamic Hormones		10:45-11:35 ANATOMY Pituitary Gland: Gross & Development	11:40-12:30 BIOCHEMISTRY Anterior Pituitary: Growth Hormone	LUNCH			BEHAVIORAL SCIENCES Lifestyle & Health: Stress I	SELF STUDY	
WED July 27	8:30-9:20 BIOCHEMISTRY Anterior Pituitary: Other Pituitary Hormones	9:25-10:15 ANATOMY Pituitary Gland: Microscopic Anatomy		10:45-11:35 PHYSIOLOGY Hypothalamus & Anterior Pituitary Hormone & GH Dr. Sulail	11:40-1:10 JOURNAL CLUB Dr. Muslim / Dr. Amber				1:45-2:35 BEHAVIORAL SCIENCES Lifestyle & Health: Stress II	SELF STUDY	
THUR July 28	8:30-9:20 BIOCHEMISTRY Posterior Pituitary Hormones	9:25-10:15 PHYSIOLOGY Posterior Pituitary Hormones & Disorders Dr. Sara		10:45-11:35 ANATOMY Thyroid & Parathyroid Glands Gross & Histology	11:40-12:30 BIOCHEMISTRY Thyroid Hormones	LUNCH			1:45-2:35 BEHAVIORAL SCIENCES Lifestyle & Health: Coping with Stressors	SELF STUDY	
FRI July 29	8:30-9:20 PHYSIOLOGY Thyroid Hormone Function & Disorders Dr. Sadaf	9:25-10:15 BIOCHEMISTRY Parathyroid Hormone: Serum Calcium Regulation		10:45-11:35 PHYSIOLOGY Parathyroid & Calcitonin Hormones I Dr. Sara	11:45-12:45 PBL 1.2 A: SR104 D: SR302 B: SR105 E: SR303 C: SR106 F: SR305	12:50-1:30 LH102 Post PBL Session	PRAYER		SELF STUDY		

Jinnah Medical & Dental College

MBBS 4 (Batch 22)

EYE/ENT- ENDOCRINE (WEEK 4)-DERMATOLOGY MODULE (WEEK 1)

Venue: Monday/Tuesday – JMDC LH103 Wed-Saturday – JMCH LH 1

	8:30–9:20	9:25-10:15		10:30-12:00	12:30-3:00	
MON Aug 15	PATHOLOGY Hypothyroidism & Thyroiditis Dr. Rizwana	PATHOLOGY Infectious Skin Diseases		TUTORIAL PATHOLOGY-DM Pathogenesis & Clinical Correlation A: SR105, B: SR106, C:SR305 PHARMA-Oral Anti-Diabetics & Insulin D: SR104, E: SR302, F: SR303	RESEARCH MODULE WORK SELF STUDY	
TUES Aug 16	PATHOLOGY Acute Inflammatory Dermatoses	PATHOLOGY Chronic Inflammatory Dermatoses		TUTORIAL PATHOLOGY-DM Pathogenesis & Clinical Correlation D: SR104, E: SR303, F: SR306 PHARMA-Oral Anti-Diabetics & Insulin A: SR105, B: SR106 C:SR305	RESEARCH MODULE WORK SELF STUDY	
WED Aug 17	9:00-9:50	9:55-10:45		11:00-1:00	1:15-2:45	
	CLINICAL PATHOLOGICAL CONFERENCE	ENT Larynx Infective Conditions		CLINICAL WORK Rotation 8.3	RESEARCH MODULE WORK SELF STUDY	
THURS Aug 18	MEDICINE DERMATOLOGY Basic Skin Terminologies	MEDICINE DERMATOLOGY Bacterial Infections		CLINICAL WORK Rotation 8.3	RESEARCH MODULE WORK SELF STUDY	
FRI Aug 19	MEDICINE DERMATOLOGY Viral Infections	MEDICINE DERMATOLOGY Fungal Infections		CLINICAL WORK Rotation 8.3	RESEARCH MODULE WORK SELF STUDY	
SAT Aug 20	MEDICINE DERMATOLOGY Parasitic Infections	MEDICINE DERMATOLOGY Sexually Transmitted Diseases (STDs)		CLINICAL WORK WARD TEST	1:10-2:00	SELF STUDY

BUSES PROVIDED BY JMDC WILL LEAVE MEDICARE CAMPUS AT 8:15 AM SHARP FOR KORANGI CAMPUS