

AYUB MEDICAL COLLEGE ABBOTTABAD

DEPARTMENT OF MEDICAL EDUCATION



ENDOCRINOLOGY I MODULE

2nd Year MBBS

BLOCK: F (ENDOCRINOLOGY I)

DURATION: (3) WEEKS

SESSION: 2024

STUDENT NAME

DISCLAIMER

- Developing a study guide is a dynamic process and undergoes iteration according to the needs and priorities.
- This study guide is subjected to the change and modification over the whole academic year.
- However, students are advised to use it as a guide for respective modules.
- It is to declare that the learning objectives (general and specific) and the distribution of assessment tools (both theory and practical) are obtained from Khyber Medical University, Peshawar. These can be obtained from:
<https://kmu.edu.pk/examination/guidelines>
- The time tables are for guiding purpose. It is to advise that final timetables are always displayed over the notice boards of each lecture hall.
- Students are encouraged to provide feedback via coordinator .

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1. Module Committee:

s.no	Name	Department	Role
1.	Prof. Umar Farooq	CEO & Dean	
2.	Dr. Sadia Habib	DME	Deputy Director
Module Team			
3.	Prof. Dr. Munazza Qasim	HOD Physiology	Block Coordinator
4.	Dr. Alruba Taimoor	Asst. Professor Physiology	Module Coordinator(Endo)
5.	Dr. Asfandyar Qureshi	Lecturer Physiology	Member(Reproduction)
6.	Dr. Naureen Sultan	Professor Biochemistry	Member
7.	Dr. Humaira Imtiaz	Asso. Prof. Anatomy	Member
8.	Dr. Adeel Alam	Asst. Prof. Pharmacology	Member
9.	Dr. Adnan Rashid	Asst. Prof. Comm. Medicine	Member
10.	Dr. Farhat Naz	Asst. Professor Medicine	Member
11.	Dr. Saima Bibi	Asst. Professor Pediatrics	Member
12.	Dr. Benazir Khan	Asst. Professor Neurosurgery	Member
13.	Miss Ayesha Salim	Lecturer Prime	Member

2. What Is a Study Guide?

It is an aid to Inform students how student learning program of the module has been organized, to help students organize and manage their studies throughout the module and guide students on assessment methods, rules and regulations.

2.1 The study guide:

- Communicates information on organization and management of the module.
- This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings.

2.2 Module objectives.

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

2.3 2.3 Achievement of objectives.

Focuses on information pertaining to examination policy, rules and regulations.

2.4 Curriculum framework:

- Students will experience integrated curriculum.

INTEGRATED CURRICULUM comprises of system-based modules such as Head and Neck, Neurosciences and Endocrinology which links basic science knowledge to clinical problems. Integrated teaching means that subjects are presented as a meaningful whole. Students will be able to have better understanding of basic sciences when they repeatedly learn in relation to clinical examples. Case-based discussions, computer-based assignments, early exposure to clinics, wards, and skills acquisition in skills lab and physiotherapy department are characteristics of integrated teaching program.

3. Recommended List Of Icons



Introduction To Case



For Objectives



Critical Questions



Assessment



Resource Material

4. Table Of Specification

TOS Endocrinology

S. No.	Discipline	Lectures (hours)	LGD (No. of hours)	SGD / Demonstration / Dissection (hours)	Practical (hours)	Tutorials (hours)	%distribution of hours subjectwise		No. of MC Qs	% for MC Qs	No. of OS PE	Viva Stations
1.	Gross Anatomy		4	20	8		36%	42%	0	0	0	1
2.	Histology		4				4.5%		5	6%	3	
3.	Embryology		4				4.5%		1	1%	0	
4.	Physiology	15	2	6		4	28%		37	46	0	1
5.	Biochemistry		10		6		16%		24	30	3	1
6.	Pharmacology	2					2%		2	2		
7.	Pathology	-										
8.	Community medicine	2					2%		1	1		
9.	Forensic medicine	-					-					
10.	General Medicine	3					3%		5	6		
11.	Pediatrics	1					1%		1	1		
12.	NeuroSurgery	1					1%					
13.	Prime	3					3%		4	5		
	Sub Total	27	24	26	14	4			80		6	3
	Total	95 contact hours										
	Percentage distribution	28	25	27	14	4	-		-	-	-	-

5. Organization of Module

5.1 Introduction:

The Endocrine system is the collection of glands that produce hormones to regulate metabolism, growth and development, tissue function, sexual function, reproduction, sleep, and mood, among other things. Endocrinology is the study of specific secretions known as hormones and their related effects on the body. The endocrine system uses chemical messages in the form of hormones- chemical substances that are secreted by cells into extracellular fluids and regulate metabolic activity. Blood transfers hormones to target sites. Target cells must have specific protein receptor in order to be affected by the hormones. This module deals with the normal structure and functions of endocrine glands. At the same time, it helps learners predict endocrine related conditions based on their basic knowledge. Similarly, this module of endocrine system will enable students to recognize the clinical presentations of common endocrinological and metabolic disorders and relate clinical manifestations to basic sciences. This Endocrine module will be revisited in the following years.

The study guide will help you prioritize the important topics for learning in relation to the module objectives through lectures, demonstrations, tutorials, practicals and skills lab sessions.

5.2 Rational

Endocrine disorders like Diabetes Mellitus and Thyroid related diseases are very common in all parts of Pakistan. This module provides the basis on which learners will learn not only knowledge application but also the ability to link normal and the abnormal in the following years. The students are expected to know the main concepts of endocrinology in all domains of learning and the skills gained in this module will help them deal with various endocrinological disorders.

5.3 Teaching and learning strategies:

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

1. Interactive Lectures
2. Hospital / Clinic visits
3. Small Group Discussion
4. Skills session
5. Self-Directed Study

- **Interactive lectures:**

An interactive lecture is an easy way for instructors to intellectually engage and involve students as active participants in a lecture - based class of any size.

- **Hospital / Clinic visits:**

In small groups, students observe patients with signs and symptoms in hospital or clinical settings. This helps students to relate knowledge of basic and clinical sciences of the relevant module.

- **Small group discussion (SGD):**

Students learn from each other. Everyone gets more practice at expressing their ideas. A two way discussion is almost always more creative than individual thoughts. Social skills are practiced in a 'safe' environment e.g. tolerance, cooperation.

- **Skills/Practical session:**

Skills relevant to respective module are observed and practiced where applicable in skills laboratory or Laboratories of various departments.

- **Self-Directed learning (SDL):**

Self-directed learning, which involves studying without direct supervision in a classroom/Library, is a valuable way to learn and is quickly growing in popularity among parents and students. Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Centre, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.

Assessment tools:

Theoretical knowledge is tested by a written examination system constituted by multiple choice questions (MCQ/SEQs).

The assessment of practical knowledge involves oral, spot, or objective structured practical examinations (OSPE).

Multiple Choice Questions (MCQ/SEQs):

- Multiple choice questions (MCQ/SEQs) are a form of assessment for which students are asked to select the best choice from a list of answers.
- MCQ/SEQ consists of a stem and a set of options. The stem is usually the first part of the assessment that presents the question as a problem to be solved; the question can be an incomplete statement which requires to be completed and can include a graph, a picture or any other relevant information.
- The block exam will comprise of 120 MCQ/SEQs and will be compiled according to the shared blueprint.

Short Essay Questions (SEQ)

Short answer questions generally ask for brief, text-based responses and may also be referred to as *fill-in-the-blank*; or *completion* questions.

Objective Structured Practical Examination (OSPE)

- The content may assess application of knowledge, or practical skills.
- Student will complete task in define time at one given station.
- All the students are assessed on the same content by the same examiner in the same allocated time.

A structured examination will have observed, unobserved, interactive and rest stations.

Observed and interactive stations will be assessed by internal or external examiners.

Unobserved will be static stations in which students will have to answer the questions related to the given pictures, models or specimens the provided response sheet.

Rest station is a station where there is no task given, and in this time student can organize his/her thoughts.

The Block OSPE will be comprise of 16 examined station and 6 rest stations. The stations will be assigned according to the shred blueprint.

6. Learning Objectives

6.1 General Learning objectives

At the end of this module, the students will be able to;

6.1.1 Knowledge:

1. Define hormone, target cell and receptor.
2. Contrast the term endocrine, paracrine and autocrine.
3. Classify hormones.
4. Describe the concept of second messenger.
5. Explain the principles of negative and positive feedback of hormonal secretion
6. Describe the functions and regulation of GH, FSH, LH, ACTH, TSH and Prolactin.
7. Describe the functions and regulation of growth hormone.
8. Describe the disorder associated with hypo and hyper secretion of GH.
9. Explain the mechanism of action and regulation of oxytocin and ADH.
10. Describe actions of thyroid hormone on development and metabolism and associated disorders
11. Describe the synthesis of parathyroid and calcitonin hormone.
12. Explain the effects of parathyroid hormone on calcium balance.
13. Discuss the mechanism for regulation of glucocorticoid secretion.
14. Describe the disorders associated with glucocorticoid hormones.
15. Discuss the mechanism of actions of aldosterone and its regulation.
16. Define Aldosterone escape, Primary Aldosteronism and Androgenital Syndrome
17. Development, structure, hormones and regulation of pituitary gland, thyroid gland, parathyroid gland, endocrine pancreas, and adrenal glands.
18. Describe the fundamentals of growth charts in pediatric practices.
19. Describe the types and mechanism of action of various drugs related to endocrinological disorders
20. Describe the epidemiology, risk factors and prevention of Diabetes Mellitus
21. Manage the common prevalent diseases in community
22. Identify the common medical emergencies
23. Develop plan for prevention of common community diseases

6.1.2 Skill

By the end of 4 weeks module AMC 2nd Year MBBS student should be able to;

1. Detect Glucose in urine.
2. Detect Glucose in blood.
3. Perform and interpret Glucose tolerance test.
4. Identify the structure of pituitary gland under microscope.
5. Identify the structure of thyroid gland under microscope
6. Identify the structure of adrenal gland under microscope

6.1.3 Attitude

By the end 4 weeks of Endocrinology module the AMC student should be able to;

1. Relate to patient and caregivers vulnerability.
2. Demonstrate ethical self-management.
3. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
4. Display compassion with patient and colleagues.
5. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease.
6. Demonstrate ability to give and receive feedback, respect for self and peers.
7. Develop respect for the individuality and values of others - (including having respect for oneself) patients, colleagues and other health professionals
8. Organize & distribute task
9. Exchange opinion & knowledge
10. Develop communication skills and etiquette with sense of responsibility.
11. To equip themselves for teamwork
12. Regularly attend the classes
13. Demonstrate ethical self-management
14. Display compassion with patient and colleagues

6.2 Specific learning objectives

(THEME BASED)

1. THEME-I: Tall stature (1 week)

Topics	S.No	Learning outcomes	Hours	MITs
Gross Anatomy			4	
Embryology			3	
Histology			4	
Pituitary gland	1.	Describe the development of Anterior and posterior pituitary gland		lecture
Pituitary gland	2.	Enlist the histological differences between anterior and posterior pituitary glands		lecture
Topics: Physiology	S.No	Learning outcomes	Hours	MITs
			18	
Introduction to endocrinology	3.	Describe the chemical messengers in the body		lecture
	4.	Describe the classification of hormones		lecture
	5.	Describe mechanisms of synthesis of hormones		lecture
	6.	Describe mechanisms of hormone Secretion, Transport and Clearance from the Blood		lecture
Mechanisms of Action of Hormones	7.	Explain mechanisms of Action of Hormones		lecture
	8.	Describe second messenger mechanisms for mediating intracellular hormonal functions		lecture
	9.	Describe measurement of Hormone Concentrations in the Blood		lecture
Pituitary gland Physiological anatomy and its control	10.	Describe physiological anatomy of pituitary gland		lecture
	11.	Describe hypothalamus Control of Pituitary Secretion		lecture
Physiological Functions of Growth Hormone	12.	Describe Growth hormone's effect on growth and metabolism		lecture
	13.	Explain the structure, mechanism of action and physiological effects of Insulin-Like Growth Factors		lecture
	14.	Describe regulation of Growth Hormone		lecture
Physiological Functions of Posterior Pituitary hormones	15.	Describe formation and physiological functions of Oxytocin		lecture

	16	Describe formation and physiological functions of ADH		lecture
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Topics Biochemistry	S.No	Learning outcomes	Hours 11	MITs
	17	Define hormones and differentiate between the terms- endocrine, paracrine & autocrine		lecture
	18	Classify hormones on various basis		lecture
	19	Discuss the mechanisms of action of hormones		lecture
	20	Define 2nd messengers and their roles		lecture
Anterior Pituitary hormones	21	Enumerate the hormones of anterior pituitary gland		lecture
	22	Describe the chemistry, secretion, mechanism of action, regulation and metabolic effects of Growth hormone with its related clinical disorders		lecture
Posterior Pituitary hormones	23	Enumerate the hormones of the posterior pituitary gland		lecture
	24	Describe the chemistry, secretion, mechanism of action, regulation and metabolic effects of the hormones of the posterior pituitary gland with its related clinical disorders		lecture
Topics Medicine	S.No	Learning outcomes	Hours 03	MITs
Acromegaly	25	Describe the pathophysiology, clinical features and investigations of patient with Acromegaly and Gigantism		lecture
	26	Describe the etiology, clinical features and investigations of a patient with diabetes insipidus		lecture
Topics Neurosurgery	S.No	Learning outcomes	Hours 01	MITs
Tumors of pituitary gland	27	Explain the types, clinical features, CT and MRI findings and management of pituitary tumors		lecture
Topics Pediatrics	S.No	Learning outcomes	Hours 01	MITs
Growth charts	28	Describe the fundamentals of growth charts in pediatric practices		lecture
Theme-2 (Neck swelling with bulging eyes and Tetany)				
Gross anatomy				
Thyroid gland	29	Describe the gross structure, lobes, relations, blood supply, venous drainage,		lecture

		nerve supply and lymphatic drainage of thyroid gland		
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Embryology				
Thyroid gland	30	Describe the developmental events and anomalies of thyroid gland		lecture
Parathyroid gland	31	Describe the developmental events of parathyroid gland and its anomalies		
Histology				
Thyroid gland	32	Describe the microscopic structure of thyroid gland		lecture
Physiology				
Introduction of thyroid hormones	33	Describe formation, Secretion and transport of thyroid hormones		lecture
	34	Explain mechanism of action of thyroid hormones		lecture
	35	Explain the actions of thyroid hormones on cellular metabolism		lecture
Physiological functions & regulation of thyroid hormone	36	Describe Physiological effects of Thyroid Hormone on Growth, metabolism and body systems		lecture
	37	Describe Regulation of Thyroid Hormone Secretion		lecture
Physiological functions and Control of the Parathyroid hormone	38	Explain Mechanism of action PTH		lecture
	39	Describe Effect of Parathyroid Hormone on Calcium and Phosphate concentrations		lecture
	40	Describe Control of Parathyroid Secretion		lecture
Physiological role of VIT D and Calcitonin in Calcium metabolism	41	Explain Role of Vit. D in Calcium and phosphorus metabolism		lecture
	42	Explain physiological functions of calcitonin		lecture
Biochemistry				
Thyroid gland	43	Enumerate the hormones secreted from thyroid glands		lecture
	44	Describe the chemistry, biosynthesis,		lecture

		secretion, mechanism of action, regulation and metabolic effects of thyroid hormone and calcitonin with its related clinical disorders		
Parathyroid gland	45	Enumerate the hormones secreted from parathyroid gland		lecture
	46	Describe the chemistry, biosynthesis, secretion, mechanism of action, regulation and metabolic effects of parathyroid hormone with its related clinical disorders		lecture
Medicine				
Thyroid disorders	47	Explain the clinical features of hyperthyroidism		
	48	Explain the clinical features of hypothyroidism		
Topics Pharmacology	S.No	Learning outcomes	Hours 02	MITS
Antithyroid drugs	49	Describe the types and mechanism of action of Antithyroid drugs		
Topics Community medicine	S.No	Learning outcomes	Hours 01	MITS
Diabetesmellitus	50	Describe the epidemiology, risk factors and prevention of Diabetes Mellitus		lecture

Theme-3 (Increased thirst and urination)

Histology			Hours	MITS
Pancreas	51	Describe the histological features of pancreas and differentiate between exocrine and endocrine parts of pancreas		lecture
Physiology				
Mechanism of action of insulin & its control	52	Explain Mechanism of action of insulin		lecture
	53	Describe the Control of Insulin Secretion		lecture
Physiological Effects of insulin on carbohydrates, protein, and Fats	54	Describe the effects of insulin on carbohydrates, proteins and Fats metabolism		lecture
Physiology of Glucagon	55	Describe regulation of glucagon and its effects		lecture
	56	Describe the physiological actions of Somatostatins		lecture

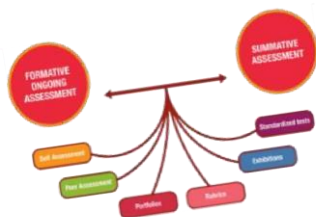
Physiological effects of Diabetes Mellitus	57	Describe Effects of hyperglycaemia /hypoglycaemia on body functions		lecture
	58	Explain Insulin resistance		lecture
Biochemistry				
Pancreas	59	Enumerate the hormones secreted by pancreas		lecture
	60	Describe the chemistry, biosynthesis, secretion, mechanism of action, regulation and metabolic effects of Insulin & Glucagon with its related clinical disorders		lecture
Pharmacology				
Antidiabetic drugs	61	Explain the mechanism of action of oral antidiabetic drugs		lecture
	62	Explain the mechanism of action and complications of Insulin therapy		lecture
Medicine				
Diabetes Mellitus	63	Explain the short-term and long-term complications of Diabetes Mellitus		lecture
	64	Describe the pathophysiology, clinical features and treatment of Diabetes Mellitus		lecture
Theme-4 (Moon face)				
Gross anatomy	65	Describe the gross anatomy and relations of adrenal glands on both sides		lecture
Embryology				
Adrenal gland	66	Describe the development of adrenal gland		lecture
Histology	67	Describe the microscopic picture of adrenal gland and differentiate between the various histological zones of adrenal gland		lecture
Physiology				
Physiological functions of Aldosterone	68	Describe Types, Mechanisms and regulation of mineralocorticoids		lecture
	69	Describe the physiological Effects of Aldosterone (Renal, Circulatory and others)		lecture
Physiological Functions of the Glucocorticoids	70	Describe Types and Mechanisms of Glucocorticoids actions		lecture
	71	Describe Effects of Cortisol on Carbohydrate, Proteins and Fat Metabolism		lecture
	72	Describe role of Cortisol in Stress, Inflammation and Allergy		lecture

Physiological functions Adrenocorticotrophic Hormone ACTH	73	Describe ACTH Secretion & mechanism of Action		lecture
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Biochemistry				
Adrenal cortical hormones	74	Enumerate the hormones secreted from adrenal cortex		lecture
	75	Describe biosynthesis, secretion, mechanism of action, regulation and metabolic effects of Adrenal cortical hormones with its related clinical disorders		lecture
Adrenal medullary hormones	76	Enumerate the hormones secreted from adrenal medulla		lecture
	77	Describe biosynthesis, secretion, mechanism of action, regulation and metabolic effects of Adrenal medullary hormones with its related clinical disorders		lecture
	78	Describe the structure and functions of Melanocyte-Stimulating Hormone, Lipotropin, and Endorphins		lecture
Medicine				
Cushing`s syndrome	79	Describe the clinical features and complications of Cushing`s syndrome		lecture
Addison`s disease	80	Describe the clinical features and complications of Addison`s disease		lecture

Practical work

Biochemistry				
Urinary glucose	81	Detect glucose in urine		Practical
Blood glucose	82	Detect glucose in blood		Practical
Glucose tolerance test	83	Perform and interpret Glucose tolerance test		Practical
Histology				
Pituitary glands	84	Identify the structure of pituitary gland under microscope		Demostration/ Practical
Thyroid gland	85	Identify the structure of thyroid gland under microscope		Demostration/ Practical
Adrenal gland	86	Identify the structure of adrenal gland under microscope		Demostration/ Practical



7. Examination and Methods of Assessment:

A. Block Assessment

Block Assessment consists of

- Theory Paper(MCQs, SAQs) and
- Skill assessment (OSPE).
 1. Non-Interactive/ Non-Observed Station:
 2. Interactive/Observed Station

B. Attendance Requirement:

More than 75% attendance is mandatory to sit for the examinations.

Paper-F

Table-1: MCQs

Subject	Endocrine module
Gross Anatomy	0
Histology	5
Embryology	1
Physiology	37
Biochemistry	24
PRIME including Research	4
Medicine	5
Pharmacology	2
Community medicine	1
Pediatrics	1
Forensic medicine	0
Total	80

Table-2: OSPE

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

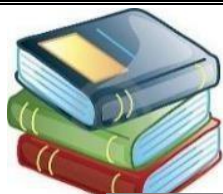
Year 2 Professional Exam in System-based Curriculum

Theory paper	Modules	Theory marks	Internal assessment theory (10%)	OSPE/OSPE	Internal assessment OSPE/OSPE (10%)	TOTAL MARKS
Paper F	Endocrine Reproduction	120	13	90	10	233

The year-2 will be assessed in 3 blocks

- 1) Block-1(Neurosciences 1A and 1B modules) will be assessed in paper-D
- 2) Block-2 (GIT and Liver, Metabolism and Renal) will be assessed in paper-E
- 3) Block-3 (Endocrine and Reproduction) will be assessed in paper-F
- 4) Each written paper consists of 120 MCQs and
- 5) Internal assessment will be added to final marks in KMU as shown in table-3
- 6) In OSPE, each station will be allotted 5 marks, and a total of 90 marks are allocated for each OSPE examination

Each assessment will be divided into a written paper and a practical examination (in the form of OSPE which will also include embedded viva stations). The details of each section are given in the tables given below.



8. Learning Opportunities and Resources

a. Instruction

Apart from these resource learning ,students can consult books available in library or recommended by the specialty experts.

b. Books:

Gross Anatomy	<ol style="list-style-type: none"> 1. Netter`s “Atlas of Human Anatomy-6th Edition 2. Gray`s Anatomy-4th Edition 3. Cunningam`s “Textbook of Anatomy’-12th Edition 4. Snell`s Clinical Anatomy by regions-9th Edition 5. Snell`s Clinical Neuroanatomy-7th Edition 6. Last`s Anatomy-10th Edition
Embryology	<ol style="list-style-type: none"> 1. Langman`s Medical Embryology-14th Edition 2. The Developing Human “by Keith L Moore”-10th Edition
Histology	<ol style="list-style-type: none"> 1. Textbook of Histology “by Leslie Gartner-3rd Edition 2. Basic Histology-Text and Atlas- “by Luiz Carlos-11th Edition
Physiology	<ol style="list-style-type: none"> 1. Guyton`s “Textbook of Medical Physiology”-13th edition 2. Ganong`s “Review Of Medical Physiology”-25th Edition 3. “Human Physiology-From cell to system” by <i>Lauralee Sherwood</i>-8th Edition
Biochemistry	<ol style="list-style-type: none"> 1. Harper`s Biochemistry-31st Edition 2. Principles of Medical Biochemistry-3rd Edition 3. Lippincot`s Biochemistry-6th Edition
Pharmacology	<ol style="list-style-type: none"> 1. Katzung`s Basic and Clinical Pharmacology-12th Edition
Pediatrics	<ol style="list-style-type: none"> 1. Nelson textbook of pediatrics,21st edition 2. Text book of pediatrics, Pakistan pediatrics Association 3. CDC Growth charts 4. Basics of p,ediatrics, Pervez Akbar Khan, Ninth edition
Community Medicine	<ol style="list-style-type: none"> 1. Community medicin by Parikh 2. Community medicine by M Ilyas 3. Basic Statistics for the Health Sciences by Jan W Kuzma
Medicine	<ol style="list-style-type: none"> 1. Davidson`s Principles and Practice of Medicine-22nd Edition
Clinical Examination	<ol style="list-style-type: none"> 1. Talley and O'Connor's Clinical Examination-6th Edition

c. Website:**Anatomy:**

1. <http://files.readmedbooks.com/anatomy/netter-atlas-7.pdf>
2. [file:///C:/Users/dell/Desktop/Gray's%20Anatomy-The%20Anatomical%20Basis%20of%20Clinical%20Practice%2041st%20Edition%20-%202015%20\[MSCambo\].pdf](file:///C:/Users/dell/Desktop/Gray's%20Anatomy-The%20Anatomical%20Basis%20of%20Clinical%20Practice%2041st%20Edition%20-%202015%20[MSCambo].pdf)
3. <https://worldofmedicalsaviours.com/cunninghams-manual-of-practical-anatomy/>
4. https://ia802606.us.archive.org/16/items/pdfy-d-PFUmAhPcw_n7EV/snell%20clinical%20anatomy%20by%20regions%209th%20ed%2012_2.pdf
5. <http://med-mu.com/wp-content/uploads/2018/06/Snell-Neuroanatomy-7th-Edition.pdf>
6. <http://files.readmedbooks.com/anatomy/lasts-anatomy.pdf>

Embryology

1. <https://bhumikapalrocks.files.wordpress.com/2016/02/langmans-medical-embryology-12th-ed.pdf>
2. <https://mymedicallibrary.files.wordpress.com/2016/08/the-developing-human-edition-8th.pdf>

Histology

1. [file:///C:/Users/dell/Desktop/\(Lib-Ebooks.com\)150320212213%20\(4\).pdf](file:///C:/Users/dell/Desktop/(Lib-Ebooks.com)150320212213%20(4).pdf)
2. file:///C:/Users/dell/Desktop/pdfcoffee.com_2002-basic-histology-by-luis-carlos-junqueira-text-amp-atlas-10th-edition-mcgraw-hill-appleton-amp-lange-pdf-free.pdf

Physiology:

1. <https://med-mu.com/wp-content/uploads/2018/06/Guyton-and-Hall-Textbook-of-Medical-Physiology-12th-Ed-PDFtahir99-VRG.pdf>
2. <https://medicostimes.com/guyton-medical-physiology-pdf/>
3. https://ia903208.us.archive.org/23/items/GanongsReviewOfMedicalPhysiology25thEdition/Ganongs%20Review%20of%20Medical%20Physiology_%2025th%20Edition.pdf
4. <https://worldofmedicalsaviours.com/medical-books/mbbs/physiology/sherwood-human-physiology.pdf>

Biochemistry:

1. <file:///C:/Users/dell/Desktop/harpers-illustrated-biochemistry-28th-edition.pdf>
2. <http://repository.stikesrspadgs.ac.id/69/1/Principles%20of%20Medical%20Biochemistry%20Meisenberg%20Simmons-635hlm.pdf>
3. <https://worldofmedicalsaviours.com/medical-books/mbbs/biochemistry/lippincotts-illustrated-reviews-series.pdf>

Medicine:

1. <https://drive.google.com/file/d/0B8VbbFBwHaS8a2ZlaXIIlMGNwMmc/view?resourcekey=0-cJj3WGul40Avx4G5U1gX2A>

Community Medicine:

1. https://drive.google.com/file/d/1kG_04GUfxSOxsdRaucxJ-iykVgc-BZT0/view
2. <https://barlybeltatimen.wixsite.com/charrattisri/post/ilyas-ansari-community-medicine-book-free-46>
3. <https://psebooks.club/-/reader-roman/#/flow=gHqRV5+cdn.bkfd4.club/q=Basic%20Statistics%20for%20the%20Health%20Sciences/>

Pharmacology:

1. https://pharmacomedicale.org/images/cnpm/CNPM_2016/katzung-pharmacology.pdf

9. Timetables

AYUB MEDICAL COLLEGE ABBOTTABAD TIME TABLE OF 2nd YEAR MBBS CLASS FOR THE SESSION 2024

BLOCK (ENDOCRINOLOGY & REPRODUCTION MODULE)WEEK (01)

This time table is tentative and subject to changes needed according to the situation at the commencement of module

Days	8:00 – 10:00	10:00 – 11:00	11:00 – 12:00	12:00 – 12:45	12:45 – 1:15	01:15 – 03:00
Monday	Batch-A: Histology (Biochem lab) Batch-B: Physiology Batch-C: Biochemistry Batch-D: Self Directed Learning	Biochemistry Dr Sarwat	Physiology Dr Alruba	Gross Anatomy DrHumaira	Prayer Break	Pak. Studies Mr Manzoor Qadir
Tuesday	Batch-A: Biochemistry Batch-B: Histology (Biochem lab) Batch-C: Self Directed Learning Batch-D: Physiology	Biochemistry Dr Sarwat	Physiology Dr Alruba	Gross Anatomy DrHumaira		Pharmacology Dr Saima Bukhari
Wednesday	Batch-A: Physiology Batch-B: Self Directed Learning Batch-C: Histology (Biochem lab) Batch-D: Biochemistry	Medicine Dr Tauqeer	Physiology Dr Alruba	Histology Dr. Fatima		Physiology Dr Sajjad
Thursday	Batch-A: Self Directed Learning Batch-B: Biochemistry Batch-C: Physiology Batch-D: Histology (Biochem lab)	Biochemistry Dr Sarwat	Physiology Dr Alruba	Medicine Dr Farhat		Batch-A: Batch-B: Batch-C: Batch-D:
Friday	Islamiat Mr Aftab	Com. Medicine Dr Zainab	Embryology Dr Ashfaq	Physiology Dr Alruba		Paediatrics Dr Zaheer Abbas

Asstt. Prof. Dr. Alruba Taimoor Block Coordinator

AYUB MEDICAL COLLEGE ABBOTTABAD
TIME TABLE OF 2nd YEAR MBBS CLASS FOR THE SESSION 2024
BLOCK (ENDOCRINOLOGY & REPRODUCTION MODULE)
WEEK (02)

This time table is tentative and subject to changes needed according to the situation at the commencement of module

Days	8:00 – 10:00	10:00 – 11:00	11:00 – 12:00	12:00 – 12:45	12:45 – 1:15	01:15 – 03:00
Monday	Batch-A: Histology (Biochem lab) Batch-B: Physiology Batch-C: Biochemistry Batch-D: Self Directed Learning	Biochemistry Dr Sarwat	Physiology Dr Alruba	Neurosurgery Dr. Ehtisham	Prayer Break	Physiology LH-2
Tuesday	Batch-A: Biochemistry Batch-B: Histology (Biochem lab) Batch-C: Self Directed Learning Batch-D: Physiology	Biochemistry Dr Sarwat	Physiology Dr Alruba	Gross Anatomy Dr.Humaira		Physiology LH-2
Wednesday	Batch-A: Physiology Batch-B: Self Directed Learning Batch-C: Histology (Biochem lab) Batch-D: Biochemistry	Biochemistry Dr Sofia	Physiology Dr Alruba	Histology Dr. Fatima		Batch-A: Batch-B: Batch-C: Batch-D:
Thursday	Batch-A: Self Directed Learning Batch-B: Biochemistry Batch-C: Physiology Batch-D: Histology (Biochem lab)	Pak. Studies Mr Manzoor Qadir	Physiology Dr Alruba	PRIME Dr. Rizwana		Batch-A: Batch-B: Batch-C: Batch-D
Friday	Islamiat Mr. Aftab LH-2	Com. Medicine Dr. Rizwana	Embryology Dr. Ashfaq	Physiology Dr Alruba		Medicine Dr. Farhat

Asstt. Prof. Dr. Alruba Taimoor Block Coordinator

AYUB MEDICAL COLLEGE ABBOTTABAD
TIME TABLE OF 2nd YEAR MBBS CLASS FOR THE SESSION 2024
BLOCK (ENDOCRINOLOGY & REPRODUCTION MODULE)
WEEK (03)

Days	8:00 – 10:00	10:00 – 11:00	11:00 – 12:00	12:00 – 12:45	12:45 – 1:15	01:15 – 03:00
Monday	Batch-A: Histology (Biochem lab) Batch-B: Physiology Batch-C: Biochemistry Batch-D: Self Directed Learning	Biochemistry Dr Sofia	Physiology Dr Alruba	Pharmacology Dr. Maha Yousafzai	Prayer Break	Pak. Studies LH-2
Tuesday	Batch-A: Biochemistry Batch-B: Histology (Biochem lab) Batch-C: Self Directed Learning Batch-D: Physiology	Biochemistry Dr Sofia	Physiology Dr Alruba	Gross Anatomy Dr. Humaira		Batch-A: Batch-B: Batch-C: Batch-D:
Wednesday	Batch-A: Physiology Batch-B: Self Directed Learning Batch-C: Histology (Biochem lab) Batch-D: Biochemistry	Biochemistry Dr Sofia	Physiology Dr Alruba	Histology Dr. Fatima		Batch-A: Batch-B: Batch-C: Batch-D:
Thursday	Batch-A: Self Directed Learning Batch-B: Biochemistry Batch-C: Physiology Batch-D: Histology (Biochem lab)	Biochemistry Dr Sofia	Physiology Dr Alruba	Medicine Dr. Rashid		Batch-A Batch-B: Batch-C: Batch-D:
Friday	Islamiat Mr. Aftab	Prime Dr. Rizwana	Embryology Dr. Ashfaq	Physiology Dr Alruba		Prime Dr. Zainab

This time table is tentative and subject to changes needed according to the situation at the commencement of module

Asstt. Prof. Dr. Alruba Taimoor Block Coordinator

10. For inquiry and troubleshooting

Please contact

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Cell: +92-3239841515

E mail: medicolodhi@outlook.com

F. Please give overall rating of the module

90% - 100%	()	60% - 70%	()
80% - 90%	()	50% - 60%	()
70% - 80%	()	below 50%	()

Please comment on the strengths of the module and the way it was conducted.

Please comment on the weaknesses of the module and the way it was conducted.

Please give suggestions for the improvement of the module.

Optional - Your name and contact address:

Thank you!!