

**RYK Medical College**

Department of Medical Education



**Study Guide M.B.B.S Second Professional**

**Module 8 (Block 5): Endocrinology and Reproduction - 1**

**Academic Year 2025/26**

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**List of Abbreviations**

|  |  |  |  |
| --- | --- | --- | --- |
| A | Anatomy | **HCL** | Hydrochloric acid |
| ABG | Arterial blood gas | **H&E** | Hematoxylin and eosin |
| Ag | Aging | **HL** | Hematopoietic and lymphatic |
| AKI | Acute kidney injury | **HMP** | Hexose monophosphate |
| ALT | Alanine transaminase | **HNSS** | Head & neck special senses |
| AMP | Adenosine Monophosphate | **ICF** | Intra cellular fluid |
| ANS | Autonomic nervous system | **IL** | Interleukin |
| AST | Aspartate transaminase | **IN** | Inflammation |
| AV | Atrioventricular | **INR** | International normalized ratio |
| B | Biochemistry | **IUD** | Intrauterine device |
| Bhs | Behavioral sciences | **IUGR** | Intra uterine growth restriction |
| C | Civics | **JVP** | Jugular venous pressure |
| CBC | Complete blood count | **LDH** | Lactate dehydrogenase |
| C-FRC | Clinical-Foundation Rotation Clerkship | **M** | Medicine |
| CK | Creatine kinase | **MALT** | Mucosa associated lymphoid tissue |
| CM | Community medicine | **MCH** | Mean corpuscular hematocrit |
| CNS | Central nervous system | **MCV** | Mean corpuscular volume |
| CO | Carbon monoxide | **MRI** | Magnetic resonance imaging |
| CO2 | Carbon dioxide | **MS** | Musculoskeletal |
| COPD | Chronic obstructive pulmonary disease | **MSD** | Musculoskeletal disorders |
| COX | Cyclooxygenase | **NEAA** | Non essential amino acids |
| CPR | Cardio pulmonary resuscitation | **NMJ** | Neuromuscular junction |
| CT | Computed tomography | **NS** | neurosciences |
| CV | Cardiovascular | **O** | Ophthalmology |
| CVA | Cerebral vascular accident | **Or** | Orientation |
| DALY | Disability adjusted life year | **P** | Physiology |
| DCMLS | Dorsal column medial lemniscus system | **Pa** | Pathology |
| DLC | Differential leukocyte count | **PAF** | Platelet activating factor |
| DNA | Deoxy ribonucleic acid | **PBL** | Problem based learning |
| ECF | Extra cellular fluid | **PCR** | Polymerase chain reaction |
| ECG | Electrocardiography | **PDGF** | Platelet derived growth factor |
| ECP | Emergency contraceptive pill | **Pe** | Pediatrics |
| EEG | Electroencephalogram | **PEM** | Protein energy malnutrition |
| EnR | Endocrinology and reproduction | **PERLs** | Professio Ethics Research Leadership |
| ENT | Ear Nose Throat | **PH** | Pharmacology |
| ER | Emergency room | **PNS** | Peripheral nervous system |
| F | Foundation | **Psy** | Psychiatry |
| FEV1 | Forced expiratory volume 1 | **PVC** | Premature ventricular contraction |
| FM | Forensic medicine | **QALY** | Quality adjusted life years |
| FVC | Forced vital capacity | **QI** | Quran & Islamiat |
| GFR | Glomerular filtration rate | **R** | Renal |
| GIT | Gastrointestinal tract | **Ra** | Radiology |
| GMP | Guanosine monophosphate | **RBCs** | Red blood cells |
| GO | Gynecology and obstetrics | **SA** | Sinoatrial |
| RDA | Recommended dietary allowance | **TCA** | Tricarboxylic acid cycle |
| Re | Respiratory | **TNA** | Tumor necrosis factor |
| RFLP | Restriction fragment length polymorphism | **USG** | Ultrasonography |
| RMP | Resting membrane potential | **UTI** | Urinary tract infection |
| RNA | Ribonucleic acid | **WBCs** | White blood cells |
| S | Surgery |  |  |
| GTO | Golgi tendon organ |  |  |

**CURRICULUM FRAMEWORK**

The University of Health Sciences Lahore has designed a five year modular framework

For integrated curriculum based on specific systems, clinical clerkships, Quran and

professionalism.

|  |  |  |  |  |  |  |
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| **Curriculum framework** | | | | | | |
| **Year 01** | **Modules** | **Block 1** | | | **Block 2** | **Block 3** |
| * Foundation -1 * Hematopoietic & Lymphatic | | | * Musculoskeletal and locomotion - 1 | * Cardiovascular - * Respiratory - 1 |
| PERLS-1, Quran-1, Islamiat & Civics, Pakistan Studies, English | | | | |
| C-FRC -1(Clinical-Foundation, Rotation, Clerkship) | | | | |
|  | | | | | | |
| **Year 02** | **Modules** | **Block 4** | | | **Block 5** | **Block 6** |
| * GIT & Nutrition – * Renal – 1 | | | * Endocrinology & Reproduction – 1 * Head & Neck, Special senses | * Neurosciences –1 * Inflammation - 1 |
| PERLS-2, Quran Pak-2, Islamiat, Civics & Pakistan Studies, English | | | | |
| C-FRC -2(Clinical-Foundation, Rotation, Clerkship) | | | | |
|  | | | | | | |
| **Year 03** | **Modules** | **Block 7** | | **Block 8** | | **Block 9** |
| * Foundation – 2 * Infectious Diseases * Neoplasia * Musculoskeletal & Locomotion - 2 | | * Hematopoietic, Immunity & Transplant * Cardiovascular - 2 | | * Respiratory – 2 * Forensic Medicine * Community Medicine & Family Health -1 |
| PERLS - 3, Quran Pak – 3 | | | | |
| C-FRC -3 (Clinical-Foundation, Rotation, Clerkship) | | | | |
|  |  |  | | | | |
| **Year 04** | **Modules** | **Block 10** | **Block 11** | | | **Block 12** |
| * Renal – 2 * Endocrinology & Reproduction – 2 * GIT & Nutrition–2 * Neurosciences - 2 | * Maternal & Child Health * Ophthalmology * Otorhinolaryngology | | | * Community Medicine & Family Health -2 * Psychiatry & Behavioral Sciences |
| PERLS – 4, Quran Pak – 4, Electives & BLS Workshops | | | | |
| C-FRC - 4 (Clinical-Foundation, Rotation, Clerkship) | | | | |
|  | | | | | | |
| **Year 05** | **Modules** | * Gynecology & Obstetrics * Pediatrics * Medicine & Allied * Surgery & Allied | | | | |
| C-FRC -5 (Clinical-Foundation, Rotation, Clerkship) | | | | |

**INTRODUCTION TO STUDY GUIDE**

**WHAT IS A STUDY GUIDE?**

This study guide is prepared for the students of 2nd year MBBS (RYKMC) for session 2025-26 affiliated with University of Health Sciences Lahore (UHS). The learners (2nd year MBBS students) will be able to:-

* Organize the learning program module for the session 2025-26.
* Manage their studies as per guidance provided throughout the module.

Learn the assessment tools, rules & regulations governing the module.

**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, clinical skills, demonstration, tutorial and case based learning that will be implemented to achieve the module objectives.
* Provides a list of learning resources such as books, computer assisted learning programs, web- links, and journals for students to consult in order to maximize their learning.
* Highlights information on the contribution of continuous and Term examinations on the student’s overall performance.
* Includes information on the assessment methods that will be held to determine every student’s achievement of objectives.
* Focuses on information pertaining to examination policy, rules and regulations.

**MODULE INTRODUCTION**

**Module/ course Name:** Module 8, Endocrinology & Reproduction -1 (Block 5)

**Block duration:** Thirteen (13) weeks (Module 8 (week 7) + Module 9 (week 6)

**Module duration**: Seven (07) weeks

**Year:** 2nd Year MBBS

**Start Date:** ---/---/2026

**End Date:** ---/---/2026

**Departments** = Anatomy, Physiology, Biochemistry, pharmacology, pathology, community medicine, clinical skill foundation (hospital), medicine, surgery, gynecology & obstetrics, pediatrics, behavioral sciences, Quran/Islamiat & Pakistan studies, English.

**Daily timings:** 8:00 AM to 4:00 PM

**No. of hours:** 8 hours per day (20 min tea break & 40 min prayer/lunch break)

**Teaching hours:** 07 per day/35 hours per week

**Test dates: ---/---/2026, ---/---/2026, ---/---/2026**

**End module MCQ exam:**  ---/---/2026 (Theory), ---/---/2026 (OSPE, OSCE, OSVE etc)

**Interactive/ active learning session details**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Subjects** | **TBL** | **PBL** | **CBL** | **SGD** | **Tutorial** | **Demo** | **Dissection** |
| **Anatomy** | **×** | **×** | **×** | **×** | × | **4** | **2** |
| **Physiology** | **×** | **×** | **×** | **2** | **2** | **×** | **×** |
| **Biochemistry** | **1** | **×** | **×** | **1** | **2** | **×** | **×** |
| **Pharmacology** | **×** | **×** | **×** | **×** | **×** | **×** | **×** |
| **Pathology** | **×** | **×** | **×** | **×** | **×** | **×** | **×** |
| **Medicine** | **×** | **1** | **×** | **1** | **×** | **×** | **×** |
| **Gynae & Obs** | **×** | **1** | **×** | **×** | **×** | **×** | **×** |

**Module themes**

* Introduction to Endocrinology, Mechanism of action, Second messenger, measurements
* Pituitary gland
* Thyroid Gland & Parathyroid Gland
* Adrenal glands
* Pancreatic Hormones
* Reproduction & Genetics

**Clinical relevance**

* Diabetes
* Hypothyroidism & Hyperthyroidism
* Cushing Syndrome & Addison’s disease
* Dysfunctional Uterine Bleeding
* Infertility

**YEAR 2 & MODULE COMMITTEES**

**Year 2 committee**

* Prof Dr Tariq M Rehan (HOD DME) (Principal)
* Prof Dr Tehseen Iqbal (HOD Physiology) (Vice. Principal)
* Prof Dr Ghaffar Ansari (HOD Anatomy), Prof Dr Zia ur Rehman Alvi
* Prof Dr Dr Shafqat Nazeer (HOD Biochemistry)
* Prof Dr Abdul Hakeem (HOD Pathology)
* Prof Dr M Amir Rafique (HOD Pharmacology)
* Prof Dr Javed Akhter (HOD Community Medicine)
* Prof Dr M saleem (HOD Forensic medicine)

**Module committee**

* Dr Raja Faisal Zulfiqar (Anatomy)
* Dr Rahil Adil (Physiology)
* Dr khalida anwar (Biochemistry)
* Dr Syed Naqeeb Ali (Pathology)
* Dr Ali Hussain (community medicine)

**PBL, TBL & CBL Committee**

* Prof Dr Tariq M Rehan (HOD DME) (Principal)
* Prof Dr Tehseen Iqbal (HOD Physiology) (Vice. Principal)
* Prof Dr Ghaffar Ansari (HOD Anatomy), Prof Dr Zia ur Rehman Alvi
* Prof Dr Dr Shafqat Nazeer (HOD Biochemistry

**Mentoring committee**

* Prof Dr Abdul Hakeem (HOD Pathology)
* Prof Dr M Amir Rafique (HOD Pharmacology)
* Prof Dr Javed Akhter (HOD Community Medicine)
* Prof Dr M saleem (HOD Forensic medicine)

**Module coordinator:**

* Anatomy: Dr Raja Faisal Zulfiqar
* Biochemistry: Dr Dost M kalhoro
* Physiology: Dr Sadia Javiad
* Pharmacology: Dr Tesneem Yasmin
* Pathology: Dr Zartashia Khan
* Community medicine: Dr Ali Hussain
* Medicine: Dr Abdul Waheed
* Surgery: Dr Jahangeer
* Pediatrics: Dr Masood Akhter
* Gynecology & obstetrics: Dr Farhat Yasmeen
* Behavioral sciences: Dr Mehwish Adnan

**Planning committee:** Department of medical education

**TEACHING FACULTY**

* Anatomy: Prof Dr Ghaffar Ansari, Prof Dr Zia Ur Rehman Alvi, Dr Raja Faisal Zulfiqar
* Biochemistry: Prof Dr Shafqat Nazir, Dr Khalida Anwar, Dr Dost M kalhoro
* Physiology: Prof Dr Tehseen Iqbal, Dr Rahila Adil, Dr Sadia Javaid
* Pharmacology: M Amir Rafique
* Pathology: Prof Dr Abdul Hakeem, Dr Syed Naqeeb Ali
* Community medicine: Dr Ali Hussain,
* Medicine: Prof Dr Akhter Masood
* Surgery: Prof Dr Tariq Mehmood Rehan
* Pediatrics: Prof Dr Hafiz M Tayyab
* Gynecology & obstetrics: Assoc Prof Dr Iffat Yasmin
* Behavioral sciences: Dr Mehwish Adnan
* Holy Quran & Islamiyat: Miss Kanwal
* Pakistan studies: Mr Jaffar
* Civics: Dr A Majid
* PERLs: Dr M Tariq Karim
* English: Miss Anum

**TEACHING METHODOLOGIES/STRATEGIES**

* Large group interactive sessions
* Tutorials
* Demonstrations
* Lab practical
* Simulations (Skill lab)
* Team based learning
* Case based learning
* Problem based learning
* Small group discussions

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| **Venue endocrinology & reproduction-1 module** | | | |
| **GROUPING** | **LECTURES** | **PBL/CBL** | **SMALL GROUP DISCUSSION** |
| **Group A** (1-33)  **Group B** (34-66)  **Group C** 67-100) | Anatomy → LH - 05  Physiology → LH - 02  Biochemistry → LH - 01  Pathology → LH 04  Pharmacology → LH 03  Com medicine → LH 03  Rest of all → LH 01 | Anatomy → DR - 05  Physio → DR - 02  Biochem → DR - 01  Patho → DR 04  Pharma → DR 03  Com med → DR 06 | SGD room  2nd floor |
| **TEAM BASED LEARNING** |
| * Multi - purpose hall * Skill lab * Corresponding lab |
| **(PRACTICALS)** |
| Corresponding labs |

**TIME TABLES**

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| **(Week 1) Block 5 , Module 8: Endocrinology & Reproduction 1: / /2025-26 to / /2025-26** | | | | | | | | | |
| **Days** | **8:00 am**  **9:00 am** | **9:00 am**  **10:00 am** | **10:00**  **10:20 am** | **10:20 am**  **11:20 am** | **11:20 am**  **12:20 pm** | **12:20 pm**  **01:20 pm** | **01:20**  **02:00 pm** | **02:00 pm - 4:00 pm** | |
| **Monday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-026 | **Physiology**  Dr M Irfan SR  EnR-P-001a | **Tea break** | **Gr A Ana Demo** EnR-A-001  **Gr B Phy Tuto** EnR-P-001c & d  **Gr C Bio SGD** EnR-B-001b&c | | **Biochemistry**  Dr Dost.MK  EnR-B-001a | **Prayer & Lunch break** | **Practical 1**  Group A **Anatomy (P-1)**  Group B **Physiology (P-1)**  Group C **Biochem (P-1)** | |
| **Tuesday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-027 | **Physiology**  Dr Tehseen.I  EnR-P-001b | **Gr A Phy Tuto** EnR-P-001c & d  **Gr B Bio SGD** EnR-B-001b&c **Gr C Ana Demo** EnR-A-001 | | **Physiology**  Dr M Irfan SR  EnR-P-001e | **Practical 1**  Group A **Physiology (P-1)**  Group B **Biochem (P-1)**  Group C **Anatomy (P-1)** | |
| **Wednesday** | **Anatomy (H)**  Dr Imran.A  EnR-A-035 | **Physiology**  Dr Tehseen.I  EnR-P-002a | **Anatomy(G)**  Dr ZR.Alvi  EnR-A-002 | **Gr A Bio SGD** EnR-B-001b&c  **Gr B Ana Demo** EnR-A-001  **Gr C Phy Tuto** EnR-P-001c & d | | **Practical 1**  Group A **Biochem (P-1)**  Group B **Anatomy (P-1)**  Group C **Physiology (P-1)** | |
| **Thursday** | **Anatomy (H)**  Dr Faisal.R  EnR-A-036 | **Physiology**  Dr Raheela.A  EnR-P-002b | **Anatomy(G)**  Dr Imran.A  EnR-A-003 | **Physiology**  Dr Raheela.A  EnR-P-002c | **Biochemistry**  Dr Khalida.A EnR-B-001d | **English 8-1**  Miss Anum | **Islamiat**  Islamic ethics  Miss Kanwal |
| **Friday** | **Community Medicine**  Dr Ali H  EnR-CM-001a | **Physiology**  Dr Sadia.J  EnR-P-002d | **Anatomy(G)**  Dr ZR.Alvi  EnR-A-004 | **Pathology**  Dr Naqeeb  EnR-Pa-001 | **Biochemistry**  Dr Dost.MK  EnR-B-001e | **Self directed learning** | |

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| **(Week 2) Block 5 , Module 8: Endocrinology & Reproduction 1: / /2025-26 to / /2025-26** | | | | | | | | | |
| **Days** | **8:00 am**  **9:00 am** | **9:00 am**  **10:00 am** | **10:00**  **10:20 am** | **10:20 am**  **11:20 am** | **11:20 am**  **12:20 pm** | **12:20 pm**  **01:20 pm** | **01:20**  **02:00 pm** | **02:00 pm - 4:00 pm** | |
| **Monday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-028 | **Physiology**  Dr Raheela.A  EnR-P-003a | **Tea break** | **Anatomy(G)**  Dr Faisal.R  EnR-A-005a | **Physiology**  Dr Sadia.J  EnR-P-003b | **Biochemistry**  Dr Javed.I  EnR-B-002a | **Prayer & Lunch break** | **Practical/Skill Lab/SGD 2**  Group A **Anatomy (P-2)**  Group B **Skill lab 1**  Group C **Medicine (SGD)** | |
| **Tuesday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-029 | **Physiology**  Dr M Irfan SR  EnR-P-003c | **Anatomy(G)**  Dr Imran.A  EnR-A-005b | **Physiology**  Dr Tehseen.I  EnR-P-003d | **Biochemistry**  Dr Khalida.A  EnR-B-002b | **Practical/Skill Lab/SGD 2**  Group A **Skill lab 1**  Group B **Medicine (SGD)**  Group C **Anatomy (P-2)** | |
| **Wednesday** | **Anatomy (H)**  Dr ZR.Alvi  EnR-A-037 | **Physiology**  Dr Raheela.A  EnR-P-004a | **Anatomy(G)**  Dr Faisal.R  EnR-A-006a | **Physiology**  Dr Sadia.J  EnR-P-004b | **Biochemistry**  Dr Dost.MK  EnR-B-003a | **Practical/Skill Lab/SGD 2**  Group A **Medicine (SGD)**  Group B **Anatomy (P-2)**  Group C **Skill lab 1** | |
| **Thursday** | **Anatomy (H)**  Dr Imran.A  EnR-A-038 | **Physiology**  Dr M Irfan SR  EnR-P-004c | **Anatomy(G)**  Dr ZR.Alvi  EnR-A-006b | **Physiology**  Dr Tehseen.I  EnR-P-004d | **Biochemistry**  Dr Shafqat.N  EnR-B-003b | **PERLs**  2-09  Dr M Tariq K | **Islamiat**  Individuals rights  Miss Kanwal |
| **Friday** | **Community Medicine**  Dr Ali H  EnR-CM-001b | **Physiology**  Dr Raheela.A  EnR-P-005a | **Anatomy(G)**  Dr Faisal.R  EnR-A-007a | **Pathology**  Dr Naqeeb  EnR-Pa-002 | **Biochemistry**  Dr Javed.I  EnR-B-004a | **Group A** Anatomy Dissection  **Group B & C** Self directed learning | |

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| **(Week 3) Block 5 , Module 8: Endocrinology & Reproduction 1: / /2025-26 to / /2025-26** | | | | | | | | | |
| **Days** | **8:00 am**  **9:00 am** | **9:00 am**  **10:00 am** | **10:00**  **10:20 am** | **10:20 am**  **11:20 am** | **11:20 am**  **12:20 pm** | **12:20 pm**  **01:20 pm** | **01:20**  **02:00 pm** | **02:00 pm - 4:00 pm** | |
| **Monday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-030a | **Physiology**  Dr Sadia.J  EnR-P-005b | **Tea break** | **Anatomy(G)**  Dr Imran.A  EnR-A-007b | **Physiology**  Dr M Irfan SR  EnR-P-005c | **Biochemistry**  Dr Khalida.A  EnR-B-004b | **Prayer & Lunch break** | **Practical/Skill Lab/PBL 3**  Group A **Anatomy (P-3)**  Group B **Skill lab 2**  Group C **Medicine (PBL)** | |
| **Tuesday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-030b | **Physiology**  Dr Tehseen.I  EnR-P-005d | **Gr A Ana Demo** EnR-A-008  **Gr B Phy Tuto** EnR-P-006 a & b  **Gr C Bio Tuto** EnR-B-006 | | **Biochemistry**  Dr Dost.MK  EnR-B-004c | **Practical/Skill Lab/PBL 3**  Group A **Skill lab 2**  Group B **Medicine (PBL)**  Group C **Anatomy (P-3)** | |
| **Wednesday** | **Anatomy (H)**  Dr Faisal.R  EnR-A-039 | **Biochemistry**  Dr Shafqat.N  EnR-B-005 | **Gr A Phy Tuto** EnR-P-006 a & b  **Gr B Bio Tuto** EnR-B-006  **Gr C Ana Demo** EnR-A-008 | | **Physiology**  Dr M Irfan SR  EnR-P-006c | **Practical/Skill Lab/PBL 3**  Group A **Medicine (PBL)**  Group B **Anatomy (P-3)**  Group C **Skill lab 2** | |
| **Thursday** | **Anatomy (H)**  Dr ZR.Alvi  EnR-A-040 | **Physiology**  Dr Tehseen.I  EnR-P-006d | **Anatomy(G)**  Dr Faisal.R  EnR-A-009 | **Gr A Bio Tuto** EnR-B-006  **Gr B Ana Demo** EnR-A-008  **Gr C Phy Tuto** EnR-P-006 a & b | | **PERLs**  2-10  Dr M Tariq K | **Holy Quran**  Tazeerat  Dr A Majid |
| **Friday** | **Community Medicine**  Dr Ali H  EnR-CM-002 | **Physiology**  Dr Raheela.A  EnR-P-007a | **Anatomy(G)**  Dr Imran.A  EnR-A-0010a | **Pathology**  Dr Hakeem  EnR-Pa-003 | **Physiology**  Dr Sadia.J  EnR-P-007b | **Group B** Anatomy Dissection  **Group A & C** Self directed learning | |

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| **(Week 4) Block 5 , Module 8: Endocrinology & Reproduction 1: / /2025-26 to / /2025-26** | | | | | | | | | |
| **Days** | **8:00 am**  **9:00 am** | **9:00 am**  **10:00 am** | **10:00**  **10:20 am** | **10:20 am**  **11:20 am** | **11:20 am**  **12:20 pm** | **12:20 pm**  **01:20 pm** | **01:20**  **02:00 pm** | **02:00 pm - 4:00 pm** | |
| **Monday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-031 | **Physiology**  Dr M Irfan SR  EnR-P-007c | **Tea break** | **Anatomy(G)**  Dr ZR.Alvi  EnR-A-010b | **Physiology**  Dr Tehseen.I  EnR-P-007d | **Biochemistry**  Dr Dost.MK  EnR-B-007 | **Prayer & Lunch break** | **Practical/Skill Lab 4**  Group A **Anatomy (P-4)**  Group B **Skill lab 3**  Group C **Biochemistry (P-2)** | |
| **Tuesday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-032a | **Physiology**  Dr Raheela.A EnR-P-007e | **Anatomy(G)**  Dr Faisal.R  EnR-A-010c | **Physiology**  Dr Sadia.J  EnR-P-008 | **Biochemistry**  Dr Shafqat.N  EnR-B-008 | **Practical/Skill Lab 4**  Group A **Skill lab 3**  Group B **Biochemistry (P-2)**  Group C **Anatomy (P-4)** | |
| **Wednesday** | **Anatomy (H)**  Dr Imran.A  EnR-A-041 | **Physiology**  Dr M Irfan SR  EnR-P-009a | **Anatomy(G)**  Dr ZR.Alvi  EnR-A-011 | **Physiology**  Dr Tehseen.I  EnR-P-009b | **Biochemistry**  Dr Javed.I  EnR-B-009 | **Practical/Skill Lab 4**  Group A **Biochemistry (P-2)**  Group B **Anatomy (P-4)**  Group C **Skill lab 3** | |
| **Thursday** | **Anatomy (H)**  Dr Faisal.R  EnR-A-042 | **Physiology**  Dr Raheela.A  EnR-P-009c | **Anatomy(G)**  Dr Imran.A  EnR-A-012 | **Aging**  Dr A Yar M  EnR-Ag-001 | **Biochemistry**  Dr Khalida.A EnR-B-010a | **PERLs**  2-11  Dr M Tariq K | **Holy Quran**  Justice  Dr A Majid |
| **Friday** | **Community Medicine**  Dr Ali H  EnR-CM-003a | **Physiology**  Dr Sadia.J  EnR-P-009d | **Anatomy(G)**  Dr ZR.Alvi  EnR-A-013 | **Pathology**  Dr Naqeeb  EnR-Pa-004 | **Biochemistry**  Dr Dost.MK  EnR-B-010b | **Group C** Anatomy Dissection  **Group A & C** Self directed learning | |

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| **(Week 5) Block 5 , Module 8: Endocrinology & Reproduction 1: / /2025-26 to / /2025-26** | | | | | | | | | |
| **Days** | **8:00 am**  **9:00 am** | **9:00 am**  **10:00 am** | **10:00**  **10:20 am** | **10:20 am**  **11:20 am** | **11:20 am**  **12:20 pm** | **12:20 pm**  **01:20 pm** | **01:20**  **02:00 pm** | **02:00 pm - 4:00 pm** | |
| **Monday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-032b | **Physiology**  Dr M Irfan SR  EnR-P-009e | **Tea break** | **Gr A Ana Demo** EnR-A-014&15  **Gr B Phy SGD** EnR-P-010 b & c  **Gr C Bio Tuto** EnR-B-012 & 013 | | **Biochemistry**  Dr Shafqat.N  EnR-B-011 | **Prayer & Lunch break** | **Practical/Skill Lab 5**  Group A **Anatomy (P-5)**  Group B **Skill lab 4**  Group C **Biochemistry (P-3)** | |
| **Tuesday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-033 | **Physiology**  Dr Tehseen.I  EnR-P-010a | **Gr A Phy SGD** EnR-P-010 b & c  **Gr B Bio Tuto** EnR-B-012 & 013  **Gr C Ana Demo** EnR-A-014&15 | | **Anatomy(G)**  Dr Faisal.R  EnR-A-016 | **Practical/Skill Lab 5**  Group A **Skill lab 4**  Group B **Biochemistry (P-3)**  Group C **Anatomy (P-5)** | |
| **Wednesday** | **Anatomy (H)**  Dr ZR.Alvi  EnR-A-043 | **Physiology**  Dr M Irfan SR  EnR-P-010d | **Gr A Bio Tuto** EnR-B-012 & 013  **Gr B Ana Demo** EnR-A-014&15  **Gr C Phy SGD** EnR-P-010 b & c | | **Physiology**  Dr Tehseen.I  EnR-P-010 e | **Practical/Skill Lab 5**  Group A **Biochemistry (P-3)**  Group B **Anatomy (P-5)**  Group C **Skill lab 4** | |
| **Thursday** | **Anatomy (H)**  Dr Imran.A  EnR-A-044 | **Physiology**  Dr Raheela.A  EnR-P-011a | **Anatomy(G)**  Dr ZR.Alvi  EnR-A-017 | **Community Medicine**  Dr Ali H  EnRCM-003b | **Biochemistry**  Dr Dost.MK EnR-B-014a | **Pak studies**  History of Pakistan-1  Mr Jaffar | **Civics**  Individual & State 1  Dr A Majid |
| **Friday** | **Pharmacology**  **Dr Zameer AS**  EnR-Ph-001a | **Physiology**  Dr Sadia.J  EnR-P-011b | **Anatomy(G)**  Dr Faisal.R  EnR-A-018 | **Pathology**  Dr Hakeem  EnR-Pa-005 | **Biochemistry**  Dr Shafqat.N  EnR-B-014b | **Group A** Anatomy Dissecton  **Group B & C** Self directed learning | |

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| **(Week 6) Block 5 , Module 8: Endocrinology & Reproduction 1: / /2025-26 to / /2025-26** | | | | | | | | | |
| **Days** | **8:00 am**  **9:00 am** | **9:00 am**  **10:00 am** | **10:00**  **10:20 am** | **10:20 am**  **11:20 am** | **11:20 am**  **12:20 pm** | **12:20 pm**  **01:20 pm** | **01:20**  **02:00 pm** | **02:00 pm - 4:00 pm** | |
| **Monday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-034a | **Physiology**  Dr M Irfan SR  EnR-P-011c | **Tea break** | **Anatomy(G)**  Dr Imran.A  EnR-A-019 | **Physiology**  Dr Tehseen.I  EnR-P-011d | **Biochemistry**  Dr Javed.I  EnR-B-015a | **Prayer & Lunch break** | **Practical/CSF 6**  Group A **Anatomy (P-6)**  Group B **(CSF 2)**  Group C **(CSF 1)** | |
| **Tuesday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-034b | **Physiology**  Dr Raheela.A  EnR-P-011e | **Anatomy(G)**  Dr ZR.Alvi  EnR-A-020 | **Physiology**  Dr Sadia.J  EnR-P-012a | **Biochemistry**  Dr Khalida.A  EnR-B-015b | **Practical/CSF 6**  Group A **(CSF 2)**  Group B **(CSF 1)**  Group C **Anatomy (P-6)** | |
| **Wednesday** | **Anatomy (H)**  Dr Faisal.R  EnR-A-045 | **Physiology**  Dr M Irfan SR  EnR-P-012b | **Anatomy(G)**  Dr Imran.A  EnR-A-021 | **Physiology**  Dr Tehseen.I  EnR-P-012c | **Biochemistry**  Dr Dost.MK EnR-B-016 | **Practical/CSF 6**  Group A **(CSF 1)**  Group B **Anatomy (P-6)**  Group C **(CSF 2)** | |
| **Thursday** | **Anatomy (H)**  Dr ZR.Alvi  EnR-A-046 | **Physiology**  Dr Raheela.A  EnR-P-012d | **Anatomy(G)**  Dr Faisal.R  EnR-A-022 | **Pathology**  Dr Naqeeb  EnR-Pa-006 | **Biochemistry**  Dr Shafqat.N  EnR-B-017a | **Pak studies**  History of Pakistan-2  Mr Jaffar | **Civics**  Individual & State 2  Dr A Majid |
| **Friday** | **Pharmacology**  Dr Zameer AS  EnR-Ph-001b | **Physiology**  Dr Sadia.J  EnR-P-012e | **Anatomy(G)**  Dr Imran.A  EnR-A-023a | **Pathology**  Dr Hakeem  EnR-Pa-007a | **Biochemistry**  Dr Javed.I  EnR-B-017b | **Group B** Anatomy Dissection  **Group A & C** Self directed learning | |

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| **(Week 7) Block 5 , Module 8: Endocrinology & Reproduction 1: / /2025-26 to / /2025-26** | | | | | | | | | |
| **Days** | **8:00 am**  **9:00 am** | **9:00 am**  **10:00 am** | **10:00**  **10:20 am** | **10:20 am**  **11:20 am** | **11:20 am**  **12:20 pm** | **12:20 pm**  **01:20 pm** | **01:20**  **02:00 pm** | **02:00 pm - 4:00 pm** | |
| **Monday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-034c | **Physiology**  Dr M Irfan SR  EnR-P-013a | **Tea break** | **Anatomy(G)**  Dr ZR.Alvi  EnR-A-023b | **Physiology**  Dr Tehseen.I  EnR-P-013b | **Biochemistry**  Dr Khalida.A  EnR-B-018 | **Prayer & Lunch break** | **PBL/CSF 7**  Group A **G & O (PBL)**  Group B **(CSF 4)**  Group C **(CSF 3)** | |
| **Tuesday** | **Anatomy (E&PND)**  Dr G.Ansari  EnR-A-034d | **Physiology**  Dr Raheela.A  EnR-P-013c | **Gr A Ana Demo** EnR-A-024  **Gr B Phy SGD** EnRP-014a & 014b  **Gr C Bio TBL** EnR-B-019 & 020 | | **Biochemistry**  Dr Dost.MK  EnR-B-021 | **PBL/CSF 7**  Group A **(CSF 4)**  Group B **(CSF 3)**  Group C **G & O (PBL)** | |
| **Wednesday** | **Anatomy (H)**  Dr Imran.A  EnR-A-047 | **Physiology**  Dr Sadia.J  EnR-P-013d | **Gr A Phy SGD**EnRP-014a & 014b  **Gr B Bio TBL** EnR-B-019 & 020  **Gr C Ana Demo** EnR-A-024 | | **Pathology**  Dr Naqeeb EnR-Pa-007b | **PBL/CSF 7**  Group A **(CSF 3)**  Group B **G & O (PBL)**  Group C **(CSF 4)** | |
| **Thursday** | **Anatomy (H)**  Dr Faisal.R  EnR-A-049 | **Physiology**  Dr Raheela.A  EnR-P-014c | **Gr A Bio TBL** EnR-B-019 & 020  **Gr B Ana Demo** EnR-A-024  **Gr C Phy SGD** EnR-P-014a&014b | | **Anatomy(G)**  Dr Imran.A  EnR-A-025a | **PERLs**  2-12  Dr M Tariq K | **English 8-2**  Miss Anum |
| **Friday** | **Behavioral Sciences**  Dr Mehwish A  EnR-BhS-001 | **Physiology**  Dr Sadia.J  EnR-P-014d | **Anatomy(G)**  Dr ZR.Alvi  EnR-A-025b | **Pathology**  Dr Hakeem  EnR-Pa-008 | **Biochemistry**  Dr Khalida.A  EnR-B-021b | **Group C** Anatomy Dissecton  **Group A & C** Self directed learning | |

**DISTRIBUTION AND DURATION OF TEACHING ACTIVITIES**

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| Block 5 , Module 8: Endocrinology & Reproduction -1 | | | | |
| Subject | **Hours theory** | **Hours**  **Practical** | **SGD/TBL/Diss**  **PBL/CBL/Demo** | **Total hours** |
| Anatomy | 27(GA)+14 (E&PND)+ 14 (Histology)= 55 | 6 practical = 12 hours | 2 Diss= 4 hours  4 demo= 8 hours | **79** |
| Physiology | 51 | 1 practical = 02 hours | 2 Tuto = 4 hours  2 SGD = 4 hours | **61** |
| Biochemistry | 27 | 3 practical = 06 hours | 1 SGD = 2 hours  2 Tuto = 4 hours  1 TBL = 2 hours | **41** |
| Pharmacology | 02 | ---------- | ---------- | **2** |
| Pathology | 09 | ---------- | ---------- | **9** |
| Community Medicine | 05 | ---------- | ---------- | **5** |
| Aging | 01 | ---------- | ---------- | **1** |
| Behavioral Sciences | 01 | ---------- | ---------- | **1** |
| PERLs | 04 | ---------- | ---------- | **4** |
| Clinical skill Foundation (CSF) | ---------- | 04= 8 hours | ---------- | **8** |
| Skill lab | ---------- | 04= 8 hours | ---------- | **8** |
| Holy Quran | 02 | ---------- | ---------- | **2** |
| Islamiat | 02 | ---------- | ---------- | **2** |
| Pakistan studies | 02 | ---------- | ---------- | **2** |
| Civics | 02 | ---------- | ---------- | **2** |
| English 1 | 02 | ---------- | ---------- | **2** |
| Self directed learning | 10 | ---------- | ---------- | **10** |
| Medicine | ---------- | ---------- | 2= 4 hours  1SGD+1PBL | **4** |
| Gynae & obs | ---------- | ---------- | 1PBL= 2 hours | **2** |
| Total | **175** | **36** | **34** | **245** |
| Total | **7 hours/day = 35 hours/week ×7 weeks = 245 hours** | | | |

**MODULE RATIONALE**

Endocrinal system is a unique system consists of glands which control body systems through its secretions known as hormones. These chemical compounds known as hormones play an integral role in maintaining cell activity and organ functions through biochemical signals. Humanreproduction is controlled by hormones released by gonads. Changes in hormonal levels can affect human fertility. In this module the anatomy and physiology of the endocrine organs, functional biochemistry of the hormones secreted will be taught in integrated fashion with reference to common disease occurring in Pakistani community.

**Aims:**

Aims of Endocrinology and Reproduction Module are:

**Knowledge:**

- Understand the structure, function, and regulation of endocrine glands and hormones.

- Comprehend hormonal control of reproduction, menstrual cycle, and gametogenesis.

- Recognize common endocrine and reproductive disorders and their clinical presentations.

**Skills:**

- Perform relevant physical examinations and interpret diagnostic tests.

- Develop clinical reasoning for managing endocrine and reproductive conditions.

**Attitude**:

- Show empathy and ethical awareness in patient care.

- Appreciate the psychological and social impacts of hormonal and reproductive health issues.

**IMPLEMENTATION TORs**

1. The time calculation for completion of modules and blocks is based on 35 hours per week. Total hours of teaching, learning and formative/summative internal assessment to be completed in a year are 1260.
2. The hours mentioned within each module are the mandatory minimum required. The rest of the hours are left to the discretion of the institution that can be used in teaching, learning and assessment as per decision of the institutional academic council.
3. The content and the intended learning outcomes written are mandatory, to be taught, at the level required, as the end year assessment will be based on these. However, the level of cognition can be kept at a higher level by the institution.
4. The Table of Specifications provided will be used for the three papers of the first professional examination. The same table of specifications should be used for the respective three block exams for internal assessment.

**MODULE OUTCOMES**

* Explain Development, structure, hormones and regulation of pituitary gland, thyroid gland,
* Parathyroid gland, endocrine pancreas, adrenal glands, testes and ovaries.
* Describe the etiology, Patho-physiology, relevant clinical features & 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.

**COURSE CONTENTS, CODES & SPECIFIC LEARNING OBJECTIVE**

| **CODE** | | **GROSS ANATOMY** | | |
| --- | --- | --- | --- | --- |
| **SPECIFIC LEARNING OUTCOMES** | **DISCIPLINE** | **TOPIC** |
| EnR-A-001 | | Describe the location, anatomy blood supply & functions of pituitary gland | Anatomy | Diencephalon |
| EnR-A-002 | | Describe the Thyroid, Parathyroid with their type, Relations, blood supply, & 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, & nerve supply. | Anatomy |
| EnR-A-003 | | Describe the structure, fascia, coverings, blood & nerve supply of testis | Anatomy | Testis |
| EnR-A-004 | | Describe the gross anatomical features & neuro vasculature of epididymis & vas deferens, Seminal vesicles, Bulbourethral gland | Anatomy | Accessory  Male organs |
| EnR-A-005 | | Describe the morphological features & neurovascular supply of prostate.  Describe, Draw & Label Lobes of prostate gland Correlate the clinical manifestations of prostate with  lobes &/or zones of prostate | Prostate |
| EnR-A-006 | | Describe the anatomical basis & manifestations of the following conditions:  1) Hydrocele of spermatic cord &/or testes 2) Hematocele of testes  3) Torsion of the spermatic cord 4) Varicocele 5) Vestigial remnants of embryonic genital duct  Describe anatomical basis of vasectomy & metastasis of cancer of testis &scrotu | Anatomy  Surgery | Testis  clinical  conditions |
| 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) & describe the structures forming it. | Anatomy | Pelvic Girdle |
| Describe the bones & salient anatomical features of Bony pelvis (girdle) | Anatomy |
| EnR-A-009 | | Describe the type, articulations & mechanics of movements {axes & 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 & False Pelvis | Anatomy | Bony Pelvis |
| Describe different types of pelvises | Anatomy |  |
| Describes diameters of pelvis & their application in obstetric practice | Anatomy |
| EnR-A-011 | | Describe the anatomical basis of pelvic fractures & their consequences | Anatomy | Pelvis (Girdle) |
| Describe the topographical anatomy of pelvic walls & its components | Anatomy |
| Describe the mechanics of changes occurring in pelvic ligaments & joint mobility in late pregnancy | Anatomy |
| EnR-A-012 | | Describe the topographical anatomy of pelvic floor. | Anatomy | Pelvic Floor |
| Describe origin, insertion, nerve supply & actions of muscles of pelvic floor | Anatomy |
| EnR-A-013 | | Tabulate attachments, innervations & actions of muscles of pelvic walls & floor | Anatomy | Pelvic Mus |
| EnR-A-014 | | Describes injury to pelvic floor during child birth & its complications | Ana/ G&O | Pelvic Girdle |
| EnR-A-015 | | Describe the peritoneal reflections in the male & female pelvis | Anatomy | Peritoneum |
| 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 & inlet | Anatomy | Pelvic outlet & inlet |
| Enumerate the structures passing through the pelvic inlet & pelvic outlet | Anatomy |
| EnR-A-019 | | Tabulate differences in peritoneal reflections in male & female pelvis | Anatomy | Peritonem |
| EnR-A-020 | | Describe origin, course, branches & distribution of common iliac artery | Anatomy | Pelvic Vessels |
| Describe the origin, course, branches & distribution of external & internal iliac arteries | Anatomy |
| Describe the origin, course, tributaries & area of drainage of pelvic veins | Anatomy |
| EnR-A-021 | | Describe the location, afferents & efferent of pelvic lymph nodes | Anatomy | L. Nodes |
| EnR-A-022 | | Tabulate the origin, course, distribution & anastomosis of arteries of the pelvis | Anatomy | Pelvic Lymph Nodes |
| Describe origin, root value, course, relations, branches & distribution of Pelvic nerves | Anatomy |
| Describe the anatomical basis & clinical picture for ligation of internal iliac artery & collateral circulation in pelvis | Anatomy |
| Describe the clinical picture & anatomical basis for the injury to pelvic nerves | Anatomy |
| Give anatomical justification for pelvic nerve blocks | Anatomy |
| Describe the morphological features of urethra (male & female) | Anatomy |
| EnR-A-023 | | Tabulate the parts of the male urethra with their location & salient features | Anatomy | Pelvis |
| Describe the clinical picture & anatomical justification for Ureteric Caliculi, Cystocele, Suprapubic Cystotomy, Rupture of Bladder | Anatomy |
| Describe the clinical picture & anatomical justification for Hypertrophy of Prostate | Anatomy |
| Describe the gross anatomical features of Ovaries & Fallopian Tubes with their relations, blood supply, nerve supply & 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 & Vagina  Describe related clinical conditions  1. Prolapse of uterus 2. Vaginal trauma 3. culdocentesis | Anatomy |
| Describe, identify, justify & demonstrate the supports of uterus |  |
| Describe the attachments of the perineal membrane & list its relations | Anatomy |  |
| Discuss the formation of Superficial & Deep Perineal Pouches | Anatomy |
| EnR-A-024 | | List the contents of Superficial & Deep Perineal Spaces | Anatomy | Perineum |
| Tabulate the attachments, actions & nerve supply of muscles of perineum | Anatomy |
| Describe the topographical anatomy & neuro- vasculature of Penis | Anatomy |
| Tabulate the muscles forming the perineal body with their attachments & nerve supply | Anatomy |
| EnR-A-025 | | Describe the clinical presentation & 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 |
| **CODES** | | **EMBRYOLOGY & POST-NATAL DEVELOPMENT** | | |
| EnR-A-026 | | Describe t h e contributing factors, histogenesis & sequence of events of the development of Thyroid gland | Anatomy | Dev of Thyroid gland |
| Explain the embryological basis of the thyroglossal Cyst | Anatomy |
| EnR-A-027 | | Describe the development of para-thyroid glands | Anatomy | Dev of Thyroid gland |
| 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 |
| EnR-A-029 | | Describe the development of pituitary gland  Describe the embryological basis for the congenital anomalies of pituitary development | Anatomy | Dev of Pituitary Gland |
| EnR-A-030 | | Describe contributing factors, histogenesis & development of adrenal gland | Anatomy | Dev 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 | Dev  Of Reproductive system |
| List & describe the Factors influencing the differentiation of gonads | Anatomy |
| Evaluate the roleof the factors influencing sex determination & differentiation | Anatomy |
| Describe the Development & descent of testis | Anatomy |
| EnR-A-033 | | Describe the embryological basis & locations of undescended testes | Anatomy | Testes |
| EnR-A-034 | | Draw a concept map highlighting the development of testis | Anatomy | Dev of Reproductive system |
| Explain the Development & descent of ovaries | Anatomy |
| Draw a concept map highlighting the development of ovaries | Anatomy |
| Describe the anatomical basis for indifferent gonads, Klinefelter, turner syndromes & &rogen insufficiency | Anatomy |
| Describe the Formation of Genital Ducts In different stage (paramesonephric & mesonephric ducts) | Anatomy |
| Describe the development of female genital ducts & 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 & 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 & female external genitalia (Hyposidiasis, Epispidiasis) | Anatomy |  |
| Describe the development of inguinal canal & descent of testis & basis for Cryptorchidism, Ectopic Testis, Congenital Inguinal Hernia, Hydrocele | Anatomy |  |
| Klinefelter, turner syndromes & &rogen insufficiency Describe the embryological basis for the coverings of testis | Anatomy |  |
| **CODES** | | **MICROSCOPIC STRUCTURE (HISTOLOGY & PATHOLOGY)** | | |
|  | | **SPECIFIC LEARNING OUTCOMES** | **DISCIPLINE** | **TOPICS** |
| EnR-A-035 | | Describe the histological basis & manifestation of Gastric Carcinoid Tumors | Anatomy | Stomach |
| Classify the principal Enteroendocrine Cells on the basis of type, location, hormone produced & Actions | Anatomy | Pituitary gland  Pituitary gland |
| EnR-A-036 | | Describe microscopic structure of Pituitary gland. | Anatomy |
| Classify pituitary gland on basis of cell type, hormone produced & functions | Anatomy |
| Explain the histological basis & manifestation of Pituitary Adenomas | Anatomy |
| EnR-A-037 | | Describe the light microscopic structure of Adrenal Gland | Anatomy | Adrenal gland |
| Explain the histological basis & manifestation of Addison disease | Anatomy |
| EnR-A-038 | | Describe the light microscopic structure of endocrine pancreas | Anatomy | Pancreas |
| Classify pancreatic islets on basis of cell type, hormone produced & functions | Anatomy |
| Explain the histological basis & manifestation of Diabetes Mellitus | Anatomy |
| Explain the components & functions of neuroendocrine system | Anatomy |
| EnR-A-039 | | Describe the light microscopic structure of Thyroid Gland | Anatomy | Thyroid &  parathyroid  glands |
| Describe the light microscopic structure of Parathyroid Gland | Anatomy |
| Describe the light microscopic structure of Pineal gland | Anatomy |
| EnR-A-040 | | Describe the light & ultramicroscopic structure of Testes, structure & function of Sertoli cells. Describe Blood testes Barrier | Anatomy | Testes |
| Describe the histological basis & manifestation of Orchitis, Cryptorchidism | Anatomy |
| EnR-A-041 | | Describe the light microscopic structure of Epididymis | Anatomy | Epididymis | |
| EnR-A-042 | | Describe the light microscopic structure of vas deferens | Anatomy | v.deferens | |
| EnR-A-043 | | Describe the light microscopic structure of seminal vesicle | Anatomy | S. vesicle | |
| EnR-A-044 | | Describe the light microscopic structure of Prostate Gland | Anatomy | Prostate | |
| Describe the lobes of prostate & correlate with the |
|  | | pathologies of prostate | 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 & manifestation of Polycystic Ovary Syndrome | Anatomy  Pathology |
| EnR-A-046 | | Discuss the light microscopic structure of uterus | Anatomy | Uterus | |
| Describe light microscopic structure of different stages of Menstrual cycle | Anatomy |
| Describe the histological basis & manifestation of Endometriosis | Anatomy (O&G) |
| EnR-A-047 | | Describe the light microscopic structure of Fallopian Tube. | Anatomy | F. Tube | |
| EnR-A-048 | | Describe the light microscopic structure of Cervix | Anatomy | Cervix | |
| Describe the histological basis & 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** | | | | | |
| **CODES** | **HISTOLOGY** | | | | |
| **SPECIFIC LEARNING OBJECTIVES** | | **DISCIPLINE** | **TOPICS** | |
| EnR-A-051 | Identify draw & Label the Pituitary gland under light microscope | | Anatomy | Pitu gland | |
| EnR-A-052 | Identify draw & label the Thyroid & Parathyroid glands under light microscope | | Anatomy | Thy &  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-056 | Identify, draw & label the ovaries under light microscope | | Anatomy | Ovaries | |
| EnR-A-057 | Identify, draw & label slide of different phases of uterus under light microscope | | Anatomy | Uterus | |
| EnR-A-058 | Identify, draw & label the fallopian tube under light microscope | | Anatomy | Fallo Tube | |
| EnR-A-059 | Identify, draw & label the cervix under light microscope | | Anatomy | Cervix | |
| EnR-A-060 | Identify, draw & label the vagina under light microscope | | Anatomy | Vagina | |
| EnR-A-061 | Identify, draw & label mammary gland (different stages) under microscope | | Anatomy | Mammary  gland | |
| **MEDICAL PHYSIOLOGY** | | | | | |
| **CODES** | **SPECIFIC LEARNING OBJECTIVES** | | **DISCIPLINE** | **TOPICS** | |
| EnR-P-001 | Define different chemical messengers. Enlist endocrine organs & hormones of the body. Enlist the hormones on the basis of chemical nature. Discuss the feedback control of hormone secretion. Explain the up & down regulation of receptors. Enlist the location of hormone receptors. | | Biochemistry | Introduction to Endocrinology | |
| EnR-P-001 | 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 & posterior pituitary gland. Explain the significance of hypothalamic- hypophyseal 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.  Explain the effect of growth hormone on skeletal growth & age.  Explain the significance of somatomedins in mediating the actions of growth hormone. Describe the regulation of Growth Hormone. Describe the causes & features & treatment of panhypopituitarism in adults & childhood.  Define Sheehan‟s syndrome. Enlist the types of dwarfism according to cause. Explain the pathophysiology & features of gigantism & acromegaly.  Explain the mechanism of action of antidiuretic hormone. Discuss the actions of antidiuretic hormone. Regulation of antidiuretic hormone production.  Elaborate mechanism of action of oxytocin & Discuss the actions of oxytocin. | | Physiology | Hypothalamus & pituitary | |
| 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 regulation of thyroid hormone  Enumerate antithyroid substances & explain their mechanism of action  Enumerate the causes of hyperthyroidism | | Physiology | Thyroid gland | |
| Explain features, pathophysiology & treatment of grave‟s disease  Explain the thyroid function test to investigate hypo & hyperthyroidisms  Enlist the causes of hypothyroidism Explain the pathophysiology of Hashimoto  hypothyroidism Discuss the features & pathophysiology & treatment of myxedema Explain the pathophysiology & features of endemic colloid goiter  Discuss the pathophysiology & features of nontoxic colloid goiter  Enlist the causes of cretinism Discuss the features & pathophysiology of cretinism | | Pathology |  | |
| 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 & non-metabolic functions of cortisol  Explain the interconversion of active cortisol & inactive cortisone by the 2, 11 beta hydroxysteroid dehydrogenase isoform.  Explain the mechanism for regulation of glucocorticoid secretion by hypothalamus & pituitary  Name adrenal &rogens & enlist the functions of adrenal &rogens.  Discuss the causes, features, pathophysiology & treatment of hypoadrenalism (Addison‟s disease).  Enlist the causes of hyperadrenalism.  Explain the features, pathophysiology & treatment of Cushing‟s syndrome.  Differentiate between Cushing‟s syndrome & Cushing‟s disease  Explain the clinical importance of dexamethasone suppression test to diagnose Cushing‟s syndrome. Discuss the features, pathophysiology & treatment of Conn‟s syndrome.  Enlist the cause, features & pathophysiology of congenital adrenal hyperplasia/ &rogenital syndrome | | Physiology | Adrenal gland | |
|  | Enumerate the types of pancreatic cells with their | | Physiology | Pancreatic  hormones | |
| EnR-P-004 | hormones.  Explain the mechanism of action of insulin.  Discuss the synthesis & mechanism of release of insulin.  Explain the effects of insulin on carbohydrate, protein & lipid metabolism.  Enlist the actions of insulin on liver, adipose tissue & skeletal muscle.  Enlist the factors & conditions that increase or decrease insulin  Explain the role of insulin (& other hormones) in “switching” between carbohydrate & lipid metabolism. Discuss the effects of glucagon on carbohydrate & 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 & type II diabetes mellitus  Discuss the features & pathophysiology of diabetes mellitus  Explain the role of insulin resistance, obesity & Metabolic syndrome in development of type 2 diabetes  diabetes mellitus  Explain how to diagnose the diabetes mellitus Explain the treatment of type I & type II diabetes mellitus  Explain the features, cause of insulinoma | | Physiology | Abnormalities of glucose  regulation | |
| EnR-P-006 | Discuss the physiological anatomy of parathyroid gland Explain the rapid & 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 & features of hypoparathyroidism Explain the causes & the features of primary & secondary hyperparathyroidism  Enumerate the causes & features of osteoporosis | | Physiology | Regulation of calcium in  body | |
| EnR-P-008 | Enlist the functions of adrenal medullary hormones & explain pheochromocytoma | | Physiology | Adreno  medullary  hormones | |
| EnR-P-009 | Describe the hormonal factors that affect spermatogenesis  Explain the maturation & storage of sperm in epididymis  Discuss the structure & 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 & its significance  Describe the acrosome Reaction & 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 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 & after birth  Discuss the regulation of male sexual functions by hormones from the hypothalamus & anterior pituitary gland  Enumerate & explain phases of ovarian cycle along with hormonal changes  Explain the postulated mechanism of ovulation | | Physiology | Testosterone | |
| EnR-P-011 | Explain the formation & involution of Corpus luteum Endometrial cycle  Explain the structural & 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 & progesterone Describe the interaction of follicular theca & 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 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 | | Physiology | Normal  pregnancy | |
| Explain the mechanical & 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 | |
| **MEDICAL BIOCHEMISTRY** | | | | | |
|  | **SPECIFIC LEARNING OBJECTIVES** | | **DISCIPLINE** | **TOPICS** | |
| EnR-B-001 | Define different chemical messengers. Enlist endocrine organs & hormones of the body. Enlist the hormones on the basis of chemical nature. Discuss the feedback control of hormone secretion. Explain the up & down regulation of receptors. Enlist the location of hormone receptors. Explain the mechanism of intracellular signaling after hormone receptor activation.  Name hormones that use enzyme-linked hormone receptors signaling.  Explain the mechanism of enzyme linked receptors. Explain the mechanism of hormones receptors present in cytoplasm & nucleus (act on genetic machinery).  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 | | Biochemistry | Introduction to Endocrinology | |
| EnR-B-002 | Describe features of Signal transduction, Describe different types of receptors | | Biochemistry | Signal  Transduction | |
| EnR-B-003 | Discuss the classification of hormones | | Biochemistry | hormone | |
| EnR-B-004 | Describe different types of second messengers Differentiate the G protein & 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 | | Biochemistry | Second  messengers | |
|  | 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  Explain the control & negative feedback mechanism of hormone regulation | | Biochemistry |
| Discuss the biosynthesis, secretion, mechanism of action & metabolic functions of Insulin, glucagon, epinephrine, cortisol, thyroid & growth hormone with special reference to carbohydrate, protein & lipid  metabolism | | Biochemistry |
| Interpret disorders of hormones on the basis of sign, symptoms & given data | | Biochemistry |
| EnR-B-005 | Explain the synthesis, secretion, transport & clearance of steroid & protein hormones. | | Biochemistry | Synthesis  Hormones | |
| EnR-B-006 | Enlist the steps in the synthesis of adrenocortical hormone. Explain the synthesis & secretion of ACTH (Adrenocorticotropic hormone) in association with melanocyte-stimulating hormone, lipotropin, &  endorphin. | | Biochemistry | Synthesis  ACTH &  adrenocortical | |
| EnR-B-007 | Explain the structure, biosynthesis, secretion, transport, regulation, catabolism, mechanism of action & biochemical role of testosterone, progesterone & estrogen | | Biochemistry | Sex hormones | |
| EnR-B-008 | Discuss the role of steroid hormones in oral contraception, Infertility | | Biochemistry | infertility | |
| EnR-B-009 | Define the following terms: chromosome, allele (dominant & recessive), gene, locus, heterozygote, homozygote, hemizygous, autosome, genotype, phenotype, haploid & diploid number of chromosomes, aneuploidy, prob&, proposita, pedigree, propositus, penetrance, codominance &  polygenic | | Biochemistry | Nomenclature of genetics | |
| EnR-B-010 | Discuss the structures of genes, how they are organized & regulated. | | Biochemistry | Genes | |
| EnR-B-011 | Describe Mendelian Law of Segregation & Law of Independent Assortment. | | Biochemistry | laws | |
| EnR-B-012 | Describe the patterns of inheritance characteristic of autosomal dominant, autosomal recessive, X- linked dominant, X-linked recessive & mitochondrial traits. | | Biochemistry | Patterns of  inheritance | |
| 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)) 5) Mitochondrial disorder (Mitochondrial diabetes) | | Biochemistry | Mode of  inheritance | |
| EnR-B-015 | Discuss different structural & numerical chromosomal abnormalities. | | Biochemistry | abnormalities | |
| EnR-B-016 | Interpret normal human karyotype in terms of number&structure of chromosomes | | Biochemistry | Karyotypes | |
| EnR-B-017 | Describe effect of the following chromosomal mutations on segment of DNA:  point mutation, frameshift mutation, deletion, insertion, inversion, Robertsonian Translocation & mosaicism. | | Biochemistry | Mutations | |
| EnR-B-018 | Discuss the concept of central dogma from gene to protein (replication, transcription & translation) | | Biochemistry | Central dogma | |
| EnR-B-019 | Discuss the gene expression especially Lac operon & Tryptophan operon | | Biochemistry | Genes | |
| EnR-B-020 | Discuss the regulation of eukaryotic gene expression with special emphasis on iron metabolism & RNA interference | | Biochemistry | Gene  Expression | |
| EnR-B-021 | Discuss the following Recombinant DNA techniques with reference to their principles, procedures & 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** | | | | | |
| **CODES** | **BIOCHEMISTRY** | | | | |
| **SPECIFIC LEARNING OBJECTIVES** | | **DISCIPLINE** | **TOPICS** | |
| 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 | Preg test | |
| **CODES** | **PATHOPHYSIOLOGY & PHARMACOTHERAPEUTICS** | | | | |
| **SPECIFIC LEARNING OBJECTIVES** | | **DISCIPLINE** | **TOPICS** | |
| EnR-Ph-001 | Explain the mechanism of action of thyroxine | | Pharmacology | Thyroxine | |
| Explain Clinical uses & potential adverse effects with use of Thyroxine | |
| EnR-Pa-001 | Enumerate clinical manifestations along with hormone levels of anterior pituitary | | Pathology | Ant Pituitary | |
|  | | Classification of pituitary adenomas |  |  | |
| EnR-Pa-002 | | Enumerate & describe posterior pituitary syndromes (inappropriate ADH (Anti Diuretic Hormone) secretion, diabetes insipidus) | Pathology | Posterior  Pituitary | |
| EnR-Pa-003 | | Enumerate causes of hypo & hyperthyroidism along with levels of thyroid hormones | Pathology | Thyroid Gland | |
| EnR-Pa-004 | | Enumerate causes of hypercalcemia, hyper & hypoparathyroidism | Pathology | Parathyroid | |
| EnR-Pa-005 | | Give etiological Classification of DM (Diabetes Mellitus) Differentiating features of DM-I & DM-II on the basis of pathogenesis, clinical features, diagnosis & complications | Pathology | Endocrine  Pancreas | |
| EnR-Pa-006 | | Enumerate causes of Cushing syndrome with lab investigations  Causes & clinical features of adrenocortical insufficiency (Addison disease) | Pathology | Adrenal Gland | |
| EnR-Pa-007 | | Enumerate causes of lower genital tract infections & PIDs along with lab investigations Enumerate causes of infertility in females along with hormonal investigations Causes of dysfunctional uterine bleeding with histopathological features Pathophysiology & lab diagnosis of eclampsia & 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 | |
| **DISEASE PREVENTION & IMPACT** | | | | | |
| **CODES** | | **SPECIFIC LEARNING OUTCOMES** | **DISCIPLINE** | **TOPICS** | |
| EnR-CM-001 | | Define Diabetes Mellitus according to WHO (WHO) criteria  Classify types of Diabetes Mellitus | Community Medicine & 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. |
| EnRCM-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 & social measures for control of genetic abnormalities. | Community Medicine | Genetics | |
| EnR-CM-003 | | Define women health & life cycle approach for health related events.  \Highlight statistics related to human reproductive health issues. | Community Medicine | Reproductive health | |
|  | | Enumerate health related problems across a woman’s reproductive lifetime.  Explain the components of reproductive health. |  |  | |
| **BEHAVIORAL SCIENCES** | | | | | |
| **CODES** | | **SPECIFIC LEARNING OBJECTIVES** | **DISCIPLINE** | **TOPICS** | |
| EnR-BhS-001 | | Discuss common sexual dysfunctions & their prevalence, with emphasis on culture bound syndromes. Identify the various biological, psychological, & relational factors that can contribute to sexual difficulties. Discuss barriers to seek help.  Discuss the importance of person centered & nonjudgmental approach when discussing sexual health concerns.  Explain the ethical obligations of healthcare professionals in respecting patient confidentiality & informed consent when addressing sexual health issues. | Behavioral  Sciences | Sexual  difficulties  &Medical Practices | |
| **AGING** | | | | | |
| **THEORY TOTAL HOURS** | | | | | |
| **CODES** | | **SPECIFIC LEARNING OUTCOMES** | **DISCIPLINE** | **TOPICS** | |
| EnR-Ag-001 | | Enlist the changes that occur in female body after menopause. | Gynae/ OBS | Menopause | |
| **Holy Quran** | | | | | |
| HQ8-1 | | Tazeerat |  |  | |
| HQ8-2 | | Islamic Justice |  |  | |
| **Islamiat** | | | | | |
| IS-8-1 | | Individuals rights |  |  | |
| **Pakistan Studies** | | | | | |
| PS8-1 | | History of Pakistan – 1 |  |  | |
| PS8-2 | | History of Pakistan – 2 |  |  | |
| **Civics** | | | | | |
| C8-1 | | Individuals right and state-1 |  |  | |
| C8-2 | | Individuals right and state-2 |  |  | |
| **PERLs** | | | | | |
| 2-09 | | Responsible & Accountable - 1 |  |  | |
| 2-10 | | Responsible & Accountable – 2 |  |  | |
| 2-11 | | Communicator |  |  | |
| 2-12 | | Caring and empathic |  |  | |
| **English** | | | | | |
| 8-1 | | Structured Essay Writing |  |  | |
| 8-2 | | English Grammar |  |  | |

**OPERATIONAL DEFINITIONS**

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| **Large group interactive session (LGIS)** |
| Lecture format is the most widely used approach to teaching especially in a large class size with average attention span of 20-30 mins. Interactive lecturing involves a two-way interaction between the presenter and the participants. Interactive methods like brain storming buzz group, simulation, role play, and clinical cases can be used.  **Significance of its usage**  Relaxed environment, diverse opinions, Increase attention & motivation. Independence & group skills. Cost effective. Suitable for taking advantage of available |
| **Team Based learning** |
| TBL is a uniquely powerful form of small group learning. It provides a complete coherent framework for building a flipped course experience. There are four essential elements of TBL which include:  Teams must be properly formed and managed (5-7 students) Getting students ready  Applying course concepts Making students accountable.  **Significance of its usage**  Students are more engaged.  Increased excitement in TBL classroom Teams outperforms best members.  Students perform better in final and standardized exams. |
| **Problem Based Learning (PBL)** |
| It is an instructional student-centered approach in which students work in small groups on a health problem, identifying their own educational needs and being responsible for the acquisition of the knowledge required to understand the scenario.  **Significance of its usage**  Teamwork, Critical evaluation of literature, Self-directed learning and use of resources Presentation skills Leadership |
| **Case Based Learning (CBL)** |
| It is an inquiry structured learning experience utilizing live or simulated patient cases to solve, or examine a clinical problem, with the guidance of a teacher and stated learning objectives.  **Significance of its usage**  Induce a deeper level of learning by inculcating critical thinking skills. Flexibility on use of case  Students acquire insightful information. Stay abreast with novel advancements in healthcare. |
| **Tutorial** |
| Tutorial is a class or short series of classes, in which one or more instructors provides intensive instruction on some subject to a small group. Its purpose is to explore point of view and guide towards directed, reflective learning skills.  **Significance of its usage**  Develop and assess the extent of background knowledge of students, which enables them to properly understand concepts which may not have been understood in lectures.  Develop problem-solving skills. Develop practice of self-learning. Reduced time to understand the topic. |
| **Skill lab** |
| It refers to specifically equipped practice rooms functioning as training facilities offering hands on training for the practice of clinical skills within non-threatening environment prior to their real-life application This applies to both basic clinical skills as well as complex surgical skills.  **Significance of its usage**  Controlled, anxiety-free, and risk-free learning environment to students. A platform for repeated practice for mastery in relevant clinical skills Increase the preparedness of student learners before transitioning to the real hospital setting.  Build strong communication skills.  Enable learners to make critical decisions. |
| **Lab practical** |
| Lab practical involve things like identifying a structure, a type of stain through a microscope, a problem with a preparation, reading biochemical test results and answering safety questions. These simulations allow students to attempt the experiments in the laboratory in a risk-free way that provides the opportunity to make mistakes and learn how to correct them using the immediate feedback generated.  **Significance of its usage**  Enhance mastery of subject matter. Develop scientific reasoning. Develop practical skills. Develop teamwork abilities. |
| **Demonstration** |
| The demonstration method in teaching can be defined as giving a demo or performing a specific activity or concept. It is a teaching-learning process carried out in a systematic manner.  **Significance of its usage**  Promotes learning and correlates theory with practice. Sharpens the observation skills.  Sustain interests in learning environment. Helps teacher to evaluate students response |
| **Reflective writing** |
| It is a metacognitive process that occurs before, during and after the situation with the purpose of developing greater understanding of both the self and situation so that future encounters with the situation are informed from previous encounters.  Significance of its usage   Questioning attitude and new perspectives.   Areas for change and improvement.   Respond effectively to new challenges.   Critical thinking and coping skills |
| **Bedside teaching** |
| Teaching and learning that occurs with actual patient as the focus. It occurs in wards, emergency departments, operating rooms, and high dependency units.  Significance of its usage   Stimulus of clinical contact   Psychomotor skills   Communication skills   Language skills   Interpersonal skills   Professional attitudes and empathy   Role modeling |
| **Simulation** |
| Person, device or set of conditions, which attempts to present education and evaluation of problems authentically. The student or trainee is required to respond to the problems as she/he would under natural circumstances.  Significance of its usage   Safety for patients   Liberty to make mistakes.   Manageable/variable complexity of tasks   Opportunity to develop self-efficacy before real patient encounter.   Repeatability of tasks   Learning at different pace is permissible |
| **Clinical case based conference** |
| Clinical Case based conferences allow clinicians and medical students to present difficult case material and include discussions of diagnostic, clinical formulation, and/or treatment issues.  Significance of its usage   Provides detailed (rich qualitative) information.   Provides insight for further research.   Permitting investigation of otherwise impractical (or unethical) situations. |
| **Ward rounds** |
| It is a composite clinical practice to review inpatients’ management and progress, to make decisions about further investigations, treatment options and discharge from hospital. It is an opportunity for clinicians, students, and patients to participate in education and training at bedside.  Significance of its usage   Patient management skills   History taking   Physical examination   Time management skills   Communication skills |
| **Case presentations** |
| It is a teaching method which provides descriptive information about a clinical patient scenario and to share this educational experience with the general medical and scientific community. It prepares students for clinical practice, using authentic clinical cases by linking theory to practice with the help of inquiry-based learning methods.  Significance of its usage   Cultivate the capacity for critical analysis.   Judgement and Decision making   Facilitate creative problem solving.   Allow students to develop realistic solutions to complex problems |

**ASSESSMENT POLICY**

A student must get pass marks in every discipline (i.e. obtain minimum 50%) in the aggregate theory marks. He/ She must also get minimum of 50% in the aggregate of the practical exams in order to pass. A student must get an aggregate of 50% marks in both theory and practical in order to be declared as pass or fail in that discipline.

**Attendance**

As per RYK Medical College, University of health sciences and Pakistan Medical & Dental Council guide lines, students are instructed to attend all the lectures, small group discussions, labs, clinical ward attachments and all other instructional activities.

**80% attendance is mandatory to sit in End of module examination and Annual examination. No student will be allowed to appear in examination, if the attendance is short.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Block 5 – Table of Specifications** | | | | | | | | |
| **Theme** | **Subject** | **Written Exam** | | | **Oral/Practical/Clinical Exam** | | | |
| **MCQ**  **(1 Mark each)** | **SEQ**  **(5 Mark each)** | **Total**  **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** | PERL-2-2 | - | - | - | - | 01 | - | 08 |
| **Total** |  | **85** | **7×5=35** | **120** | **07 stations ×08=56** | **02 stations×8=16** | **03 stations ×16=48** | **120** |

**Internal Evaluation**

* Students will be assessed comprehensively through multiple methods.
* 20% marks of internal evaluation will be added to UHS final exam. That 20% may include class tests, assignment, practicals and the internal exam which will all have specific marks allocation.

**Formative Assessment**

Individual department may hold quiz or short answer questions to help students assess their own learning. The marks obtained are not included in the internal evaluation

**For UHS Examination Policy, please consult UHS website!**

**RYKMC EXAMINATION RULES & REGULATIONS**

* Student must report to examination hall/venue, 30 minutes before the exam.
* Exam will begin sharp at the given time.
* No student will be allowed to enter the examination hall after 15 minutes of scheduled examination time.
* Students must sit according to their roll numbers mentioned on the seats.
* Cell phones are strictly not allowed in examination hall.
* If any student is found with cell phone in any mode (silent, switched off or on) he/she will be not be allowed to continue their exam.
* No students will be allowed to sit in exam without University Admit Card, RYKMC College ID Card and Lab Coat
* Student must bring the following stationary items for the exam: Pen, Pencil, Eraser, and Sharpener.
* Indiscipline in the exam hall/venue is not acceptable. Students must not possess any written material or communicate with their fellow students.

**ASSESSMENT SCHEDULE, OSPE/OSCE/OSVE & PRACTICAL SCHEME**

|  |  |  |  |
| --- | --- | --- | --- |
| **DATE** | **EXAMINATION** | **TIME** | **VENUE** |
| ---/---/2026 | Theory | --:-- to --:-- | Roll no 1 - 50 (multipurpose hall) |
| Roll no 51 – 100 (skill lab) |
| ---/---/2026 | OSPE/OSCE/OSVE | --:-- to --:-- | Roll no 1 – 50 (multipurpose hall) |
| ---/---/2026 | OSPE/OSCE/OSVE | --:-- to --:-- | Roll no 51 – 1000 (multipurpose hall) |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Station # 5**  **OSPE**  **Observed**  **Anatomy** | **→** | **Station # 6**  **Rest Station** | **→** | **Station # 7**  **OSCE**  **Observed**  **PERLs** | **→** | **Station # 8**  **Structured**  **OSVE**  **Biochemistry** |
| **↑** | **Block 5 - OSPE/OSCE/OSVE Scheme Map** | | | | | **↓** |
| **Station # 4**  **Structured**  **OSVE**  **Anatomy** | |  |  |  | | --- | --- | --- | | **Subject** | **Total Stations** | **Station #** | | **Anatomy OSPE Stations** | 4 | 1-5-10-11 | | **Anatomy OSVE Station** | 1 | 4 | | **Physiology OSPE stations** | 2 | 2-9 | | **Physiology OSVE station** | 1 | 13 | | **Biochemistry OSPE stations** | 1 | 3 | | **Biochemistry OSVE station** | 1 | 8 | | **C-FRC OSCE station** | 1 | 12 | | **PERLS OSCE station** | 1 | 7 | | **Rest stations** | 2 | 6-14 | | **Total stations** | **14** |  | | | | | | **Station # 9**  **OSPE**  **Observed**  **Physiology** |
| **↑** | **↓** |
| **Station # 3**  **OSPE**  **Observed**  **Biochemistry** | **Station # 10**  **OSPE**  **Observed**  **Anatomy** |
| **↑** | **↓** |
| **Station # 2**  **OSPE**  **Observed**  **Physiology** | **Station # 11**  **OSPE**  **Observed**  **Anatomy** |
| **↑** | **↓** |
| **Station # 1 OSPE**  **Observed**  **Anatomy** | **START**  **&**  **END** | **Station # 14**  **Rest Station** | **←** | **Station # 13**  **Structured**  **OSVE**  **Physiology** | **←** | **Station # 12**  **OSCE**  **Observed**  **C-FRC** |

**ASSESSMENT TOOLS & SAMPLE QUESTIONS**

**ASSESSMENT TOOLS:**

**Single best type** also known as MCQs (Multiple Choice Questions)

**MCQ:**

A BCQ has a statement or clinical scenario of five options (likely answers).

**Correct answer carries one mark, and incorrect ‘zero mark’. There is NO negative marking.**

Students mark their responses on specified computer-based sheet designed for RYKMC.

**Sample BCQs:**

A 25 year old male patient presented with complains of productive cough, breathlessness and wheezing. He has been diagnosed with chronic obstructive pulmonary disease.

The most common risk factor for the disease is:

a) Air pollution

b) Coal mining

c) Glass industries

d) Pharmaceutical industries

e) Tobacco smoke

**OSPE, OSVE, OSCE & Practical:** Please consult the proposed plan

* It may comprise between 12- 25 stations.
* The content may assess application of knowledge, or practical skills.
* Student will complete task in defined 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:**

They will be assessed by internal or external examiners through the task or viva.

**Unobserved station (Static):**

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

**Rest station**: It is a station where no task is given, and during this time student can organize his/her thoughts.

**BOOKS AND RECOMMENDED READINGS**

**Anatomy**

* Gray’s anatomy.
* Langman’s medical embryology.
* Snell’s clinical anatomy.
* Snell’s clinical neuroanatomy. Walter kluwer.
* Laiq H.S Medical histology. Paramount books.
* Laiq H.S general anatomy. Paramount books.
* Wheater’s functional histology.

**Physiology**

* Guyton AC and Hall text book of medical physiology, W,B sunders & co.
* Essentials of medical physiology by Mushtaq Ahmad.

Ganong Physiology.

**Biochemistry**

* Harper’s biochemistry by Robert k murray, daryl k, granner McGraw-hill.
* Lippincott’s illustrated reviews biochemistry Champe, P.C & Harvey.
* ABC of clinical genetics by H.M Kingston.

**Pathology**

* Pathologic basis of disease by Vinary kumar, abul K, Abbas WB saunders.
* Pocket companion to pathologic basis of diseases,Richard Mitchall, vinary.
* General pathology by walter. Churchil livingstone.

**Pharmacology**

* Basic and clinical pharmacology by katzung, MCGraw-hill
* Pharmacology by champe and Harvey, Lippincott Williams & wilkins.

**Behavioral sciences**

* Hand book of behavioral sciences by prof Mowadat H Rana 3rd edition
* Medical and psychosocial aspects of chronic illness and disability Donna R.

**Community medicine**

* Parks textbook of preventive and social medicine, K park
* Public health and community medicine Ilyas, Ansari

**Surgery**

* Bailey & love short practice of surgery

**Medicine**

* Davidson’s principles and practice of medicine

**Islamiyat/Pakistan studies**

* Standard islamiyat (compulsory) for B.A, B.sc, M.A, M.sc by professor M. sharif islahi
* Pakistan studies (compulsory) for B.A, B.sc,B.com, Medical/Engineering by prof Shah Jahan

**End of Module/ Block examination will be conducted on ---/---/ 2025/26**