

# **Dow University of Health Sciences**



## **REPRODUCTION 01 MODULE**

**5 weeks, 4.5 credit hours**

**Second Year MBBS**

## 5 YEAR CURRICULAR ORGANIZATION

Spiral	year	Modules					
<b>First Spiral</b>	<b>I</b>	<b>FND1- Foundation</b> Cell, Genetics & Cell Death (Basics of Anatomy, Physiology, Biochemistry, Gen. Pathology, Gen. Pharmacology, Community Medicine & Behavioral Sciences,  <b>9 Weeks</b>		<b>HEM1- Blood Module</b> Immunity, Inflammation, Tissue repair, Antimicrobials & Neoplasia <b>9Week</b>			
		<b>LCM1- Locomotion</b> Bones, Joints, Nerves & Muscles, 9weeks		<b>RSP1- Respiratory System 6 weeks</b>	<b>CVS1- Cardiovascular System 4 weeks</b>		
	<b>II</b>	<b>NEU1- Nervous System</b> 8 weeks		<b>HNN1- Head &amp; Neck &amp; Special 6 weeks</b>	<b>END1- Endocrinology 5weeks</b>		
		<b>GIL 1-GIT and Liver</b> 8 weeks		<b>EXC1- Renal and Excretory System 5 weeks</b>	<b>REP1- Reproductive System 5 weeks</b>		
<b>Second Spiral</b>	<b>III</b>	<b>IDD 1- Infectious diseases 5 weeks</b>	<b>HEM2- Hematology 5 weeks</b>		<b>RSP2- Respiratory System 5 weeks</b>	<b>CVS2- Cardiovascular System 5 weeks</b>	
		<b>GIL 2-GIT and Liver (including Nutritional Disorders)</b> 8weeks		<b>EXC2- Renal &amp; Excretory System 5 weeks</b>	<b>END2- Endocrinology 5 weeks</b>		
	<b>IV</b>	<b>ORT2- Orthopedics, Rheumatology, Trauma 7 weeks</b>		<b>REP2- Reproductive System 8 Weeks</b>	<b>PMR-Physical Medicine &amp; Rehabilitation DPS-Dermatology Plastic Surgery / Burns GEN-Genetics 6 weeks</b>		
		<b>NEU2- Neurosciences and Psychiatry</b> 8 weeks		<b>OPH / ENT*</b> 4 weeks		<b>ENT/OPH *</b> 4 weeks	
<b>Third Spiral</b>	<b>V</b>	Clinical Rotation 9:30 to 3:00 (with Ambulatory, Emergency, Intensive care) In Medicine, Pediatrics, Cardiology and Neurology units <ul style="list-style-type: none"> <li>▪ Lecture on problem based approach, twice a week</li> <li>▪ Ward tutorial twice a week</li> <li>▪ Student research presentation once a week</li> </ul>			Clinical Rotation 9:30 to 3:00 (Inpatient, Ambulatory, Emergency, Intensive care and Operation Theatres) In Surgery, Gynecology & Obstetrics, Orthopedics and Neurosurgery. <ul style="list-style-type: none"> <li>▪ Lecture on problem based approach, twice a week</li> <li>▪ Ward tutorial twice a week</li> <li>▪ Student research presentation once a week</li> </ul>		

## **RATIONALE:**

Reproduction module enables students to relate the knowledge of anatomy, physiology and pathology of the structures of the male and female reproductive system with the clinical presentation of internal and external genital diseases in order to manage general gynecological problems, sexually transmitted infections, infertility, tumors, breast disorders, pregnancy and related issues in the mother and neonates.

## **TERMINAL OBJECTIVE:**

At the end of this module student will be able to:

- Describe the anatomy of male and female reproductive organs.
- Discuss the development of reproductive organs and their related embryological disorders.
- Explain role of various hormones on male and female reproductive system.
- Identify stepwise synthesis and release of gametocytes and pathologies related to it.
- Define various terms used to describe pathological menstrual bleeding.
- Express the importance of breast feeding.
- Highlight the role of pharmacological agents used to treat different reproductive pathologies.

## **MODULE OBJECTIVES:**

1. Describe bony pelvis with types, differentiate the boundaries of male & female pelvis and their bony details related to pelvic malformation correlating them with anatomy
2. Identify the boundaries and spaces of pelvic floor
3. Describe the different viscera's / organs inside the pelvic cavity
4. Identify the boundaries & recesses, know the details & contents of ischiorectal fossa.
5. Introducing the concept of relationship between health, sexual and reproductive health
6. Clarifying the components of sexual and reproductive individuals
7. Explain development of male reproductive system
8. Discuss the congenital, genetic, and developmental anomalies of male genital tract in relation to morbidity and clinical implications
9. Explain spermatogenesis and relate the mechanism of spermatogenesis and hormonal regulation
10. Identify the microscopic features of the parts of male reproductive system
11. Discuss the importance of descent of testes and enlargement of prostate
12. Describe the etio-pathogenesis, morphology and diagnostic features of prostatitis, hyperplasia and prostatic carcinoma
13. Relate the mechanism of ovulation including hormonal regulation with its abnormalities
14. Define empowerment and factors influencing the empowerment of individuals
15. Evaluate the local scenario of Reproductive health
16. Relate the mechanism of ovulation including hormonal regulation with its abnormalities
17. Describe synthesis, regulation and functions of hormones of female reproductive system
18. Describe the mechanism of action, clinical uses, adverse effects and contraindications of androgens and their antagonists

19. Describe the mechanism of actions, clinical uses, adverse effects and contraindications of estrogen and anti-estrogens
20. Describe the development of parts of female reproductive system
21. Discuss major blood vessels and nervous plexus found in pelvic cavity and their clinical importance
22. Identify the microscopic features of the parts of female reproductive system
23. Discuss the congenital, genetic, and developmental anomalies of female genital tract in relation to morbidity and clinical implications
24. Discuss pathology of dysfunctional uterine bleeding and discuss endometrial hyperplasia in relation to hormonal imbalances
25. Describe the biochemical changes during menarche
26. Describe Non-neoplastic & functional cysts of ovary
27. Describe normal sexual response cycle in male & female
28. Describe structure & function of placenta
29. Discuss Culture Bound Syndromes
30. Discuss pregnancy and parturition.
31. Identify the metabolic needs of women during pregnancy & lactation
32. Recognize Behavioral aspects of change in reproductive life (physiological changes at puberty in both male and female (secondary Sex Characteristics))
33. Relate role of hormones for mammary glands development and milk secretion
34. Identify and discuss the disorders of early pregnancy (abortion, ectopic pregnancy and gestational trophoblastic diseases)
35. Identify and discuss the disorders of late pregnancy.
36. Discuss contraception & its application & compare diff. contraceptives
37. Evaluate Myths & misconception about reproductive problems in local socio-cultural set up

## **MODULE CONTENTS:**

### **ANATOMY**

#### **Gross Anatomy:**

1. [REP1 ANG 1](#) Bony Pelvis,(inlet and outlet) Difference between male and female pelvis, Types of bony pelvis & Cephalopelvic disproportion
2. [REP1 ANG 2](#) Pelvic walls, Pelvic Floor and pelvic fascia, Division of pelvis
3. [REP1 ANG 3](#) Male internal genital organ: Gross Anatomy of Testes, epididymis, scrotum
4. [REP1 ANG 4](#) Sacrum and coccyx, Joints of pelvic cavity
5. [REP1 ANG 5](#) Male external genital organs, Male urethra
6. [REP1 ANG 6](#) Female genital tract, Uterus, cervix, Vagina
7. [REP1 ANG 7](#) Female genital tract: ovary, fallopian tube
8. [REP1 ANG 8](#) Ischiorectal Fossa
9. [REP1 ANG 9](#) Female External genitalia And female urethra
10. [REP1 ANG 10](#) Internal iliac artery and its branches
11. [REP1 ANG 11](#) Perineal spaces
12. [REP1 ANG 12](#) Nerves of the pelvis and the perineum + sacral plexus
13. [REP1 ANG 13](#) Venous and lymphatic drainage of Pelvis

#### **General Histology:**

1. [REP1 ANH 1](#) Testes
2. [REP1 ANH 2](#) Prostate, seminal vesicles, bulbo-urethral glands
3. [REP1 ANH 3](#) Ovary, fallopian tube
4. [REP1 ANH 4](#) Uterus, cervix, Vagina
5. [REP1 ANH 5](#) Testes and duct system (Practical)
6. [REP1 ANH 6](#) Prostate, seminal vesicle, bulbourethral glands (Practical)
7. [REP1 ANH 7](#) Female Genital Tract (Practical)

#### **General Embryology:**

1. [REP1 ANE 1](#) Development of male reproductive system

2. [REP1 ANE 2](#) Congenital Anomalies of Male Genital Tract, Testicular Atrophy and Epididymo-orchitis
3. [REP1 ANE 3](#) Development of female reproductive system
4. [REP1 ANE 4](#) Structure of Placenta

## PHYSIOLOGY

1. [REP1 PHY 1](#) Male reproductive system: Testosterone
2. [REP1 PHY 2](#) Female reproductive hormones: Ovarian function, Menstrual cycle & Ovulation
3. [REP1 PHY 3](#) Gametogenic function of testis (spermatogenesis ) (Tutorial)
4. [REP1 PHY 4](#) Physiological changes during female puberty & menopause
5. [REP1 PHY 5](#) Composition & importance of breast Milk (Tutorial)
6. [REP1 PHY 6](#) Pregnancy and the physiological changes taking place in the mother
7. [REP1 PHY 7](#) Functions & hormones of placenta
8. [REP1 PHY 8](#) Neonatal Physiology
9. [REP1 PHY 9](#) Pregnancy, Parturition and lactation

## BIOCHEMISTRY

1. [REP1 BIO 1](#) Male sex hormones (Biochemical forms and functions)
2. [REP1 BIO 2](#) Synthesis, regulation and functions of hormones of female reproductive system, estrogen
3. [REP1 BIO 3](#) Synthesis, regulation and functions of hormones of female reproductive system, Progesteron
4. [REP1 BIO 4](#) Synthesis, regulation and functions of Prolactin
5. [REP1 BIO 5](#) Changes during menarche (Tutorial)
6. [REP1 BIO 6](#) Biochemical changes in placenta
7. [REP1 BIO 7](#) Identify the metabolic needs of women during pregnancy and lactation
8. [REP1 BIO 8](#) Biochemical Changes in Mensturation (Tutorial)

9. [REP1 BIO 9](#) Pregnancy test (Practical)

**BEHAVIORAL SCIENCES**

1. [REP1 BHE 1](#) Define empowerment and factors influencing the empowerment of individuals
2. [REP1 BHE 2](#) Evaluate the local scenario of Reproductive health

**GYNECOLOGY & OBSTETRICS**

1. [REP1 OBG 1](#) Menstrual Disorders
2. [REP1 OBG 2](#) Common Developmental Anomalies of female reproductive system

**COMMUNITY MEDICINE**

1. [REP1 COM 1](#) Breast milk: Benefits
2. [REP1 COM 2](#) Discuss contraception and its application according to the needs of Pakistan

**PATHOLOGY**

1. [REP1 PTH 1](#) Prostatitis & BPH
2. [REP1 PTH 2](#) Congenital anomalies of MGT, Cryptorchidism, Epididymo-orchitis , testicular torsion
3. [REP1 PTH 3](#) Congenital anomalies of FGT & PID
4. [REP1 PTH 4](#) Non neoplastic lesions of vulva, non-neoplastic and functional cysts of the ovary and PCOS
5. [REP1 PTH 5](#) Disorders of early and Late Pregnancy
6. [REP1 PTH 6](#) Gestational Trophoblastic Disease including Choriocarcinoma
7. [REP1 PTH 7](#) Dysfunctional Uterine Bleeding and Endometrial Hyperplasia



## **CASE BASED LEARNING**

### **REP 1 CBL**

- Describe the anatomy of male genitalia and its anomalies.
- Describe the secretion and regulation of testosterone and gonadotrophins.
- Describe the normal and abnormal semen parameters.
- Identify the causes of male factor infertility.
- Know the importance of clinical examination and investigation of male in infertile couple.

### **REP I CBL2**

- Define polycystic ovarian disease
- Enlists the common cause of chronic anovulatory amenorrhoea
- Define polycystic ovarian diseases

## **LEARNING OBJECTIVES OF SKILL LAB**

### **❖ Reproductive Module:**

#### **I. EXAMINATION OF BREAST**

##### **INTRODUCTION / RATIONALE:**

The clinical breast examination (CBE) can be used either for screening (to detect breast cancer in asymptomatic women) or for diagnosis (to evaluate women who

present with breast complaints).

Students often avoid examination of the breasts during routine physical exam because of shyness. It should be an essential part of routine physical examination for early detection of breast disease.

#### LEARNING OBJECTIVES:

At the end of this session students should be able to:

1. Demonstrate the proper technique of clinical breast examination.
2. Demonstrate the examination of axillary and supraclavicular lymph nodes.
3. Identify the findings in following abnormalities.
  - a. Fibro adenoma
  - b. Carcinoma

**The contents are subjected to be altered according to requirement of academic calendar**

### **TEACHING STRATIGIES**

#### **LARGE CLASS FORMATS**

- Lectures

#### **SMALL GROUP DISCUSSION**

- Demonstrations
- Tutorial
- Practical
- Skill labs
- Case based learning sessions

**ASSESSMENT PLAN**

**Reproductive-1 MODULE**

	WEIGHTAGE
ANNUAL EXAM	80%
MODULE EXAM (Internal Evaluation)	
Theory	10%
Practical	10%

**CREDIT HOURS**

**Reproductive-1  
MODULE**

**4.5**

**Contact HOURS (DISCIPLINE WISE)**

<b>Discipline</b>	<b>Contact Hours</b>
<b>Gross Anatomy</b>	<b>13</b>
<b>Histology</b>	<b>8.5</b>
<b>Embryology</b>	<b>4</b>
<b>Biochemistry</b>	<b>10.5</b>
<b>Physiology</b>	<b>10</b>
<b>Gynaecology &amp; obsterics</b>	<b>2</b>
<b>Behavioral Sciences</b>	<b>2</b>
<b>Community Medicine</b>	<b>2</b>
<b>Pathology</b>	<b>7</b>
<b>CBL</b>	<b>3</b>
<b>Skill Lab</b>	<b>1.5</b>

## **BOOKS**

### **ANATOMY**

- **CLINICALLY ORIENTED ANATOMY**  
**KEITH.L.MOORE, Arthur F. Dalley, Anne M.R. Agur**  
**7<sup>th</sup> or Latest EDITION**
- **GRAY'S ANATOMY FOR STUDENTS**  
**Drake & Vogl & Mitchell**  
**3<sup>rd</sup> or Latest EDITION**
- **CLINICAL ANATOMY BY REGIONS (REFERENCE BOOK)**  
**Richard S. SNELL**  
**9<sup>th</sup> EDITION**
- **LAST'S ANATOMY: REGIONAL & APPLIED (REFERENCE BOOK)**  
**Chummy S. Sinnatamby**  
**12<sup>th</sup> or Latest EDITION**
- **ATLAS OF HUMAN ANATOMY**  
**FRANK H.NETTER**  
**6<sup>th</sup> EDITION**

### **EMBRYOLOGY**

- **LANGMAN'S MEDICAL EMBRYOLOGY**  
**T.W.SADLER**  
**13<sup>th</sup> EDITION**
- **THE DEVELOPING HUMAN CLINICALLY ORIENTED EMBRYOLOGY  
(REFERENCE BOOK)**  
**MOORE & PERSAUD & TORCHIA**

**10<sup>th</sup> EDITION**

## **HISTOLOGY**

- **MEDICAL HISTOLOGY**  
**LAIQ HUSSAIN SIDDIQUI**  
**5<sup>TH</sup> or Latest EDITION**
- **WHEATERS FUNCTIONAL HISTOLOGY**  
**BARBARA YOUNG**  
**5<sup>th</sup> EDITION**
- **BASIC HISTOLOGY( TEXT AND ATLAS) (REFERENCE BOOK)**  
**LUIZ JUNQUEIRA, JOSE CARNEIRO**  
**11<sup>th</sup> or Latest EDITION**

## **PHYSIOLOGY**

- **GUYTON AND HALL TEXTBOOK OF MEDICAL PHYSIOLOGY**  
**GUYTON AND HALL**  
**13<sup>th</sup> EDITION**

## **BIOCHEMISTRY**

- **LIPPINCOTT'S ILLUSTRATED REVIEWS SERIES**  
**DENISE R. FERRIER**  
**6<sup>th</sup> EDITION**
- **HARPERS ILLUSTRATED BIOCHEMISTRY (REFERENCE BOOK)**  
**VICTOR RODWELL, DAVID BENDER, KATHLEEN M. BOTHAM, PETER J. KENNELLY,**  
**P. ANTHONY WEIL**  
**28<sup>th</sup> EDITION**

**For Query**

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