|  |  |  |
| --- | --- | --- |
| **Course Title:**  | Growth and development |  |
| **Course Code:** | 262 GRD-4 |  |
| **Program:** | Bachelor of Medicine and Bachelor of Surgery (MBBS) |  |
| **Department:**  | N/A |  |
| **College:** | Medicine |  |
| **Institution:** | Najran University |  |

# A. Course Identification

|  |  |
| --- | --- |
| **1. Credit hours:**  | **4 (3+1)** |
| **2. Course type** |
| **a.** | University |  | College |  | Department |  | Others (Program) | **√** |  |
| **b.** | Required | **√** | Elective |  |  |
| **3. Level/year at which this course is offered:** | Year 2 - Semester-2 (level 6) |
| **4. Pre-requisites for this course** (if any)**:** Non  |
| **5. Co-requisites for this course** (if any)**:** None |

## 6. Mode of Instruction (mark all that apply)

| **No** | **Mode of Instruction** | **Contact Hours** | **Percentage**  |
| --- | --- | --- | --- |
| **1** | **Traditional classroom** | 61 | 64.21% |
| **2** | **Blended**  |  |  |
| **3** | **E-learning** |  |  |
| **4** | **Distance learning**  |  |  |
| **5** | **Other**  | 34 | 35.79% |

**7. Contact Hours** (based on academic semester)

|  |  |  |
| --- | --- | --- |
| **No** | **Activity** | **Contact Hours** |
| **1** | **Lecture** | **34** |
| **2** | **Laboratory/Studio** | **6** |
| **3** | **Tutorial**  | **0** |
| **4** | **Others** (specify) | **0** |
| **a** | **Problem-Based Learning (PBL)** | **12** |
| **b** | **Team-Based Learning (TBL)** | **6** |
| **c** | **Self-Directed Learning (SDL)** | **9** |
| **d** | **Clinical Skill Lab** | **3** |
| **e** | **Bedside Teaching** | **9** |
| **g** | **Lab Demonstration** | **16** |
|  | **Total** | **95** |

# B. Course Objectives

|  |
| --- |
| This course gives the students an overview of the different phases of the Human life. It is concerned with the pregnancy, growth and development in the pre-natal and postnatal periods within which cells, tissues, organs and the body develop as a whole from the fusion of two germ cells. The process starts from gametogenesis through fertilization, implantation and development during embryological and fetal periods. Then, it follows the development during infancy, childhood, adolescence, adulthood and senility. Moreover, it focuses on healthcare during these stages of life with special emphasis on pregnancy, nutrition and immunization. In addition, the students will learn about the healthcare provided to children, adolescents, adults and elderly people. |
|  |
| 2. Course Main Objective |
| 1) Describe basic embryological development 2) Identify various developmental aspects of pre- and postnatal life. 3) Outline normal milestones of development during infancy, childhood, adolescence, adulthood and senility.4) Identify the antenatal care during pregnancy. 5) Describe the genetic basis of human growth and development.6) Relate normal to abnormal structure and function of breast 7) Demonstrate general principles of techniques in molecular pathology and cytogenetics.  |

# C. Course Content

|  |  |  |
| --- | --- | --- |
| **..** | **List of Topics** | **Contact Hours** |
|  | Introduction to the course L | **1** |
|  | Gametogenesis SDL (T) | **3** |
|  | DNA & RNA; structures & Functions TBL  | **2** |
|  | Cell cycle L | **1** |
|  | Introduction to male genital system Practical | **2** |
|  | Spermatogenesis and Oogenesis L | **1** |
|  | Hormonal control of gametogenesis & menstruation L | **1** |
|  | Menstrual cycle L | **1** |
|  | Fertilization, cleavage, blastocyst formation & implantation L | **1** |
|  | DNA replication L | **1** |
|  | Introduction to female genital system Practical | **2** |
|  | Diagnosis & manifestation of Pregnancy L | **1** |
|  | Principles of ultrasonography Practical | **2** |
|  | Gene structure and transcription L | **1** |
|  | Chromosomes and Chromosomal abnormalities L | **1** |
|  | Bilaminar & trilaminar germ disc L | **1** |
|  | Amnion & yolk sac TBL | **2** |
|  | DNA damage & repair L | **1** |
|  | Placenta functions SDL (T) | **3** |
|  | Derivatives of the three germ layers L | **1** |
|  | Multiple conception (causes & types) L | **1** |
|  | Nutritional requirements in pregnancy L | **1** |
|  | Fetal circulation L | **1** |
|  | Genetic code and translation SDL (T) | **3** |
|  | Genetic code and translation L | **1** |
|  | Placenta, umbilical cord L | **1** |
|  | Fetal folding & external fetal features in 1st trimester L | **1** |
|  | External fetal features at the 2nd &3rd trimesters L | **1** |
|  | Regulation of gene expression L | **1** |
|  | Gene mutation L | **1** |
|  | Intrauterine growth retardation L | **1** |
|  | Mechanisms of congenital anomalies L | **1** |
|  | Congenital anomalies TBL | **2** |
|  | Autosomal & sex linked disorders L | **1** |
|  | Feeding & weaning BST | **3** |
|  | Chromosomal disorders L | **1** |
|  | Growth charts Skill Lab | **3** |
|  | Regulation of milk production & secretion L | **1** |
|  | Physiological changes in newborn L | **1** |
|  | Prenatal diagnosis of anomalies by imaging Practical | **2** |
|  | Ossification L | **1** |
|  | Role of genetics in diagnosis of neoplasm L | **1** |
|  | Genetic basis of diseases Lab | **2** |
|  | Genetic basis of diseases Lab | **2** |
|  | Anatomy & Histology of breast Practical | **2** |
|  | Physiology of puberty L | **1** |
|  | Recombinant DNA technology L | **1** |
|  | Development & anomalies of the breast Practical | **2** |
|  | Aging L | **1** |
|  | Teratogenic drugs L | **1** |
|  | Ossification centers imaging Practical | **2** |
|  | Benign & Neoplastic conditions of the breast L | **1** |
|  | Breast Tumor BST | **3** |
|  | Medical TTT of breast cancer, lactagogous L | **1** |
|  | Practical breast pathology Lab | **2** |
|  | Developmental milestones BST | **3** |
|  | PBL sessions (6 sessions x 2 hours) PBL | **12** |
| **Total** | **95** |

# D. Assessment Tasks for Students

| **#** | **Assessment task\***  | **Week Due** | **Percentage of Total Assessment Score** |
| --- | --- | --- | --- |
| **1** | Mid-block exam  | Week 3 | 20 % |
| **2** | TBL evaluation  | Week 1-3 | 10% |
| **3** | PBL evaluation | Weeks 1-4 | 10 % |
| **4** | End of course exams:- Theory: MCQs (40%) - Practical: OSPE (20%) | 5th | 60% |

**\*Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

# E. Learning Resources and Facilities

## 1.Learning Resources

|  |  |  |
| --- | --- | --- |
| **Required Textbooks** | * 1. ANATOMY
1. Snell Clinical Neuroanatomy. Richard S. Snell. 7th Ed
2. Gray’s Anatomy for Students. Richard L. Drake, Wayne Vogal and Adam W. Mitchell. 3rd Ed
	1. EMPERYOLOGY
3. Langman’s Medical Embryology . T. W. Sadler. 13th Ed
4. The Developing Human: Clinically Oriented Embryology. Keith L. Moore, T. V. N Persaud and Mark G. Torchia. 9th Ed
	1. HISTOLOGY:
5. WHEATER’S Functional Histology: A Text and Colour Atlas. Barbara Young, Phillip Woodford and Geraldine O’Dowd. 6th Ed.
6. JUNQUEIRA’S Basic Histology: text and atlas. Antony L. Mescher. 14th Ed.
	1. PHYSIOLOGY:
7. Ganong’s Review of Medical Physiology.Kim Barret et al. 25th Ed. 2016
8. Guyton ad Hall text book of medical physiology. John E. Hall. 13th Ed. 2016
	1. BIOCHEMISTRY:
9. Medical biochmistry. John W Baynes and Mark H Dominiczak. 3rd Ed.
10. Harpers illustrated biochemistry.28th Ed.
	1. PHARMACOOGY:
11. Goodman and Gillman’s The Pharmacological Basis of THERAPEUTICS. Laurance L. Brunton, John S. Lazo and Keith L. Parker. 11th Ed
12. Basic & Clinical Pharmacology by B.G. Katzung.11th Ed.
	1. PATHOLOGY:
13. Robbins Basic Pathology. Kumar, Abbas and Aster. 9th Ed.
14. Mur’s Text Book of Pathology, David A Levison et al.14th Ed.
	1. MICROBIOLOGY:
15. Aneja, KR.; Textbook of Basic & Applied Microbiology. C2015.
16. Bailey & Scott's diagnostic Microbiology. Tille patricia M. 13ed.
17. Greenwood David 1935 Medical Microbiology: A Guide to Microbial infections pathogenesis immunity laboratory diagnosis & control 18th ed.
18. Markell and Voge’s Medical parasitology. 9th Ed.
	1. MEDICINE:
19. Current Medical Diagnosis &treatment.Maxine A. Papadakis and Stephen J. McPhee. 55th Ed. 2016

Harrison’s principles of internal medicine.Kasper et al.19th Ed. |  |
| **Essential References Materials** |  |  |
| **Electronic Materials** | * Saudi Digital Library (<https://sdl.edu.sa>)

<http://www.adameducation.com/interactive-physiology> |  |
| **Other Learning Materials** |  |  |

## 2. Facilities Required

| **Item** | **Resources** |
| --- | --- |
| **Accommodation**(Classrooms, laboratories, demonstration rooms/labs, etc.) | 1. Lecture room suitable for students.
2. Laboratory (dissection room-DR, physiology, biochemistry, microbiology, pathology, pharmacology and clinical skills) suitable for students.
3. Teaching hospital for bedside teaching
 |
| **Technology Resources** (AV, data show, Smart Board, software, etc.) | 1. Computers, multimedia in lecture room, PBL room and laboratories.
2. There is a need for 25 computers with networking and internet access for student learning. As well as a number of computers and multimedia projectors in the other rooms.
 |
| **Other Resources** (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | Library supplied with reference, textbooks, and electronic resources |

# F. Specification Approval Data

|  |  |
| --- | --- |
| **Council / Committee** |  |
| **Reference No.** |  |
| **Date** |  |