**Al-Nahrain University**

**College of Medicine**

**Course Title & Code: Medical biology (MED-104 ).**

**Grade:first year**

**Semester:second**

**Hours/week: Theory (2) Practical (2)**

**Credits: theory /2 practical / 1**

**3 Credit**

**1.learning objectives**

The course is designed to enable the student to:

Understanding the basis of genetics and medical inheritance.

2.study the basic informations about human genome and techniques used in genetic studies chromosomes

3. understanding how the gene expression

4.

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**2.Instructional and Learning methods and tools**

* The syllabus is given to students in (2) hours of theoretical lectures, and (2) hours of practical sessions. The contents of the lectures include study of the structure of chromosome material and the study of diseases caused by structural and numerical abnormalities chromosomes.Also study of the types of primary tissues.
* The learing methods are used in the lectures are power points and videos.
* The practical sessions includes various subjects are related to theoretical sessions.
* And the methods of learning are used in the practical session are power points ,videos ,Prepared stained slides and light microscope
* The theoretical lectures and the practical session involved dividing the class into two groups, about more than 100 students in each, two lectures/ week, and 2hours practical laboratory session/ week.

 **3.1 Theory:**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Topics** | **اسم التدريسي** | **Hours** |
| **1** | Introduction to genetics | **أ.م.شذى محمود** | **1** |
| **2** | Patterns of Chromosome Inheritance | **أ.م.ميسون عبدالامير** | **1** |
| **3** | Chromosomes structure  | **أ.م.ميسون عبدالامير** | **1** |
| **4** | Chromosomes structure  | **أ.م.ميسون عبدالامير** | **1** |
| **5** | Cell cycle regulation  |  **أ.م.شذى**  | **1** |
| **6** | Cell cycle regulation  | **ا.م.شذى محمود** | **1** |
| **7** | Chromosome Inheritance abnormalities  | **أ.م.ميسون عبدالامير** | **1** |
| **8** | Chromosome Inheritance abnormalities  | **أ.م.ميسون عبدالامير** | **1** |
| **9** | Sex linked Inheritance | **أ.م.ميسون عبدالامير** | **1** |
| **10** | **Patterns of Genetic inheritance(**Genotype and Phenotype**)** | **ا.م.شذى محمود** | **1** |
| **11** | Inheritance of Genetic Disorders | **أ.م.شذى محمود** | **1** |
| **12** | **Midterm exam** |  | **1** |
| **13** | DNA Biology**(**DNA & RNA Structure& Function**)** | **أ.م.شذى محمود** | **1** |
| **14** | DNA Replication | **أ.م.شذى محمود** | **1** |
| **15** | Gene Expression I | **أ.م.شذى محمود** | **1** |
| **16** | Gene Expression II | **أ.م.شذى محمود** | **1** |
|  | Comparative anatomy | **أ.د.حيدر جواد** |  |
| 17 | Classification animal kingdom | **أ.د.حيدر جواد** |  1 |
| 18 | Chordate origin and phylum  | **أ.د.حيدر جواد** |  1 |
| **19** | Comparative of nervous system  | **أ.د.حيدر جواد** |  1 |
| **20** | Comparative of cardiovascular system | **أ.د.حيدر جواد** |  1 |
| **21** | Comparative of cardiovascular system | **أ.د.حيدر جواد** |  1 |
| **22** | Comparative of Gastrointestinal tract(GIT system) | **أ.د.حيدر جواد** |  1 |
| **23** | Comparative of Respiratory system  | **أ.د.حيدر جواد** |  1 |
| **24** | Comparative of Urinary system | **أ.د.حيدر جواد** |  1 |
| **25** | Comparative of Skeletal system | **أ.د.حيدر جواد** |  1 |
| **26** | Comparative of Genital system | **أ.د.حيدر جواد** |  1 |
| **27** | Atmosphere | **أ.د.حيدر جواد** |  1 |
| **Total** |  | **27** |

 **3.2 Practical:**

|  |  |
| --- | --- |
| **No.** | **Topics** |
| **1** | Light microscope(working principle and their uses) | **2** |
| **2** | Other types of microscopes | **2** |
| **3** | Karyotype analysis  | **2** |
| **4** | Types of Blood Cells |  |
| **5** | Human inherited characteristic | **2** |
| **6** | Inheritance related to sex  | **2** |
| **7** | **Mid term exam** | **2** |
| **8** | Inheritance of blood groups | **2** |
| **9** | Micro techniques (Blood smear) | **2** |
| **10** | Micro techniques(smear of sqamous epithelial cell) | **2** |

**4.Student assessment:**

The minimum requirement of a student to pass is to achieve at least 50% of total 100 marks assigned for the course.

The marks are distributed as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mid-term Theory | Mid-term Practical | Quiz&Reports | Final Practical | Final Theory |
| 18% | 10% | 12% | 20% | 40% |

Students who fail to attain the 50% cut off mark are required to re-sit for a second trial examination similar to the final one. Failing in the second trial entails the student to repeat the academic year.

**5.Books and references:**

**Text book**

1- Molecular Biology of the cell,Bruce Albert,4th Edition(2002).

2-Animal biology ,grove A.J.Newell. ninth edition, London(1989)

3-Elements of Medical Genetics,Alan E. H.Emery, 6th edition, Churchil livingstone, London Melbourne and New York(1983)