

Course plan

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| Year: 1404-1405 | Semester: <input checked="" type="checkbox"/> First, <input type="checkbox"/> Second, <input type="checkbox"/> Summer | Number of students: 5 |
| Major: Master students of Medical parasitology | <input checked="" type="checkbox"/> Basic sciences, <input type="checkbox"/> Physiopathology | Department: Parasitology, Mycology & Entomology |
| Course Title: Cellular & Molecular biology | <input checked="" type="checkbox"/> ... Theoretical, <input type="checkbox"/> Practical | Credit: Code N.: 03 |
| Prerequisite: | Day & Time: | Course type: Theoretical |
| Instructor: | Office address: | Tel: 09365125328 |
| Email: hakimazizi0873@gmail.com | Response Hours and Days: 26 hours | Student representative name and mobile number: |

Main objective: Understanding aspects of cell of eukaryotic and prokaryotic and its structure and function organs and molecules and familiarity with DNA as well as genetic engineering and its application in parasitology.

On completion of this course, the student will be able to:

- 1- Describe the structure and function of cell membranes. And cytoplasm and cytoskeleton: the structure and function of intracellular components.
- 2- Describe the structure of DNA and RNA, DNA Replication and Its Mechanism
- 3- Describe the Protein and amino acid structure and the role of ribosomes, mRNA, and tRNA in protein synthesis
- 4- Explain the PCR and its types and its application in parasitology
- 5- Explain the Cloning and purification of PCR product, enzyme and its application in cloning and PCR

References (Text books):

1. The cell : a molecular approach / Geoffrey M. Cooper, Professor Emeritus, Boston University, 8th Edition.

Student evaluation and the value related to each evaluation:

(The assessment tools that will be used to test student ability to understand the course material and gain the skills and competencies stated in learning outcomes)

| ASSESSMENT TOOLS | From |
|----------------------------|-----------|
| Assignments | 1 |
| Quiz | 1 |
| Presence in online courses | --- |
| Midterm Exam | --- |
| Final Exam (Written exam) | 18 |
| TOTAL MARKS | 20 |

Students responsibilities:

It is applied according to the regulations of the educational regulations, Regular class attendance

| Row | date | Time | Topic | Professor | References | Chapter | Pages |
|-----|----------------------|------|--|-----------|--|---------|-------|
| 1 | 21.09.2025 | 8-10 | Getting to know the students, introducing the course and how it is held, students' duties, and reviewing common concepts and terms and generalities of cellular and molecular biology. | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 2 | 28.09.2025 | 8-10 | Introduction to Molecular and Cellular Biology | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 3 | 05.10.2025 | 8-10 | Introduction to the structure and function of cell membranes. | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 4 | 12.10.2025 | 8-10 | Introduction to the cytoplasm and cytoskeleton: the structure and function of intracellular components. | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 5 | 19.10.2025 | 8-10 | Introduction to Cell nucleus - structure of DNA and RNA | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 6 | 26.10.2025 | 8-10 | Introduction to DNA Replication and Its Mechanism | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 7 | 02.11.2025 | 8-10 | Introduction to Protein and amino acid structure and the role of the nucleus | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 8 | 09.11.2025 | 8-10 | Introduction to the role of ribosomes, mRNA, and tRNA in protein synthesis | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 9 | 16.11.2025 | 8-10 | Introduction to PCR and its types and its application in parasitology | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 10 | 23.11.2025 | 8-10 | Introduction to Plasmid and Vector types | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 11 | 30.11.2025 | 8-10 | Introduction to Cloning and purification of PCR product | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 12 | 07.12.2025 | 8-10 | Introduction to enzyme and its application in cloning and PCR | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 13 | 14.12.2025 | 8-10 | Getting to know molecular software and molecular databases | Dr azizi | The Cell: A Molecular Approach 8th Edition | | |
| 14 | Based on the program | | Final exam | | | | |

