## Course E-Syllabus

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| **1** | **Course title** | Practical General Biology |
| **2** | **Course number** | 0349111 |
| **3** | **Credit hours** | 1 |
| | **Contact hours (theory, practical)** | |
| **4** | **Prerequisites/corequisites** | 0349101 |
| **5** | **Program title** | Bachelor of Biological Sciences |
| **6** | **Program code** | 0304 |
| **7** | **Awarding institution** | University of Jordan |
| **8** | **School** | Science |
| **9** | **Department** | Biology |
| **10** | **Level of course** | First Year |
| **11** | **Year of study and semester (s)** | First semester 2020/2021 |
| **12** | **Final Qualification** | B.Sc. in Biological Sciences |
| **13** | **Other department (s) involved in teaching the course** | none |
| **14** | **Language of Instruction** | English |
| **15** | **Teaching methodology** | ☐ Blended ☒Online |
| **16** | **Electronic platform(s)** | ☒Moodle ☒Microsoft Teams ☐Skype ☐Zoom ☐ Others…… |
| **17** | **Date of production/revision** | First semester 2020 |

**18 Course Coordinator:**

Laila Al-Omari, PhD
Office: Biology building
Phone number: 22211
Email: l.omari@ju.edu.jo

Office hours: Sunday, Thursday (10 am-1 pm) and by appointment

**19 Other instructors:**

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| **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** |

**02 Course Description:**

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| This course for undergraduate students deals with the following topics, safety items in the lab, safety rules, how to deal with chemicals and glass ware, knowing the most widely tools and items, How to use the microscope. Also the students will learn about the cell (in general). Also this course will cover Biological Macromolecules test, Enzyme test, Metabolic activity test, and also will cover Plant Tissues, Plant anatomy, Flower morphology, Seed structure, Animal Tissues, Vertebrate Anatomy,Cell Division and Genetics |

**02 Course aims and outcomes:**

A- Aims:

1- To provide the student with the basic fundamentals about how the scientific process operates and a fundamental understanding of basic concepts of biology.

2- To help the student apply the scientific process when describing the results of an experiment done during lab.

3- To understand the significance of biological principles to other fields of study.

4- To demonstrate skills in using laboratory equipment.

B- Intended Learning Outcomes (ILOs):

Upon successful completion of this course, students will be able to:

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| 1- Will learn about the safety rules, harmful chemicals, how to get rid of chemicals and broken glasses |
| 2-Will is able to deal with emergency issues like small injuries and chemical burns. |
| 3-Identify some of the tools commonly used in the lab for measurement. |
| 4-Deal with microscope(how to carry, identify its parts),know the other types of microscopes, preparing a wet mount |
| 5-View prokaryotic and eukaryotic cells using microscope, identify plant and animal cell organelles and describe their functions, recognize the common features of cells. |
| 6-Conduct test to detect the presence of important biological macromolecules, understand the scientific basis of some of the biochemical tests, recognize the significance of the presence of control in every experiment. |
| 7-Define enzyme and describe how it catalyses cellular reaction, discuss the effect of varying environmental conditions such as temp and PH on rate of enzymatically-controlled reactions, effect of enzyme concentration on the reaction rate ,indicate how the cofactor might operate. |
| 8-Perform lab exercises that investigate the process of fermentation and identify the by-products, Perform lab exercises that investigate the process of cellular respiration and identify the by-products, differentiate between aerobic and anaerobic processes, determine oxygen consumption during aerobic respiration, assemble the equipments needed to measure the rate of photosynthesis in water plant, changing conditions of photosynthesis, extract and separate photosynthetic pigments. |
| 9-Observe and describe the external and internal structure of the (root, stem and leaf of angiosperm plants, recognize and identify the structural parts of flowers and seeds, contrast the structures of monocots and dicots, recognize the organization of the root system and the shoot system of higher plants. |
| 10-Outline the basic cellular and physiological regulatory mechanisms and exemplify their role in maintaining homeostasis using cases from plants and animals. |
| 11-Define the following terms: tissue, organ, organ system, organism, histology, epithelial tissue, basement membrane, connective tissue, collagen fiber, elastic fiber, fibrocyte, chondrocyte, macrophage, mast cell, osteocyte, neuron, cell body and dendrite, Identify the four major types of tissue found in the body, associate the structure of the mammalian tissues with their functions. |
| 12-Identify the main organs of the digestive, muscular, respiratory, urinogenital, and the cardiovascular system of the rat. |
| 13-Define the following terms: mitosis, meiosis, homologous chromosome, gamete, gonad, sperm and egg. Identify the stages of mitosis and meiosis. Point out similarities and differences between animal and plant mitosis. Point out similarities and differences between mitosis and meiosis. Describe the significance of the mitotic and meiotic process. |
| 14-Define:gene, genetic, haploid, diploid, homozygous, heterozygous, genotype and phenotype. Distinguish between dominant and recessive alleles. |
| 15-Understanding the basic of Drosophila genetics. |
| 16-Defin simple and complex plant tissue, distinguish the different types of tissues found in vascular plants, determine the organization of plant tissues in plant organs. |

**00. Topic Outline and Schedule:**

| Topic | Week | Instructor | Achieved ILOs | Evaluation Methods | Reference |
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| Introduction- Before you start | 1 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 1,2,3 | Quiz, midterm and final | 1. Lab manual<br>2. P1-5,25-28 |
| The Microscope | 2 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 4,5,9,13,15 | Quiz, midterm and final | 3. Lab manual<br>4. Unit 3 |
| The Cell | 3 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 5 | Quiz, midterm and final | 5. Lab manual<br>6. Unit 4 |
| Biological Macromolecules | 4 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 6 | Quiz, midterm and final | 7. Lab manual<br>8. Unit 5 |
| Enzymes<br>Metabolism | 5 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 7 | Quiz, midterm and final | 9. Lab manual<br>10. Unit 6 and 8 |
| Physical Properties of the Cell | 6 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 8,10 | Quiz, midterm and final | 11. Lab manual<br>12. Unit 7 |
| **MIDTERM EXAM** | 7 | | | Includes all previous topics | 13. |
| Plant Tissues | 8 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 9,16 | Quiz and final exam | 14. Lab manual<br>15. Unit 11 |
| Plant anatomy<br>Flower morphology<br>Seed structure | 9 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 9,16 | Quiz and final exam | 16. Lab manual<br>17. Unit 16<br>18. Unit 19 |
| Animal Tissues | 10 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 11 | Quiz and final exam | 19. Lab manual<br>20. Unit 12 |
| Vertebrate Anatomy | 11 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam,** | 12 | Quiz and final exam | 21. Lab manual<br>22. Unit 13 |

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| | | **Miss Hayat Al-manaseer** | | | |
| Cell Division | 12 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 13 | Quiz and final exam | 23. Lab manual<br>24. Unit 9 |
| Genetics | 13 | **Dr Hana Al-ebose , Dr Hesham Al-younes, , Miss Sawsan Qanadilo, Miss Baraa Azam, Miss Hayat Al-manaseer** | 14,15 | Quiz and final exam | 25. Lab manual<br>26. Unit 10 |
| Final exam | 14 | | | Includes all topics | 27. |

**02 Evaluation Methods:**

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

| Description | Weight | Date |
|---|---|---|
| Midterm exam | 30% | |
| Quizzes and Reports | 30% | |
| Final exam | 40% | |

**02 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform…etc):**

Computer, Internet connection, E-Learning, LMSystem, Microsoft Team

**02 Course Policies:**

- Attendance policies: Regular class attendance is expected, attendance by seating number.

B- Absences from exams and handing in assignments on time: Reporting a valid reason of absence is accepted.

C- Health and safety procedures: All students should comply with the university Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, misbehavior: All students should comply with the university Honesty policy regarding cheating, plagiarism, misbehavior

E- Grading policy: Depends on average

F- Available university services that support achievement in the course:

Data Show Projector, internet access

**02 References:**

A- Labratory manual,third edition,

B-Required book (s), assigned reading and audio-visuals:

Online tutorial

C-Recommended books, materials, and media:

**02 Additional information:**

Name of Course Coordinator**: Dr. Laila Al-Omari**, Signature: ---------- Date: ----------

Head of Curriculum Committee/Department **Dr. Hana Al-Ebose** Signature: ----------

Head of Department: ---------- Signature: ----------

Head of Curriculum Committee/Faculty: ---------- Signature: ----------

Dean: ---------- Signature: ----------