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| 2 | Course number | 0304971 |
| 3 | Credit hours | 3 credit hours Theory |
| | Contact hours (theory, practical) | 3 hrs weekly (two 90 min lectures per week) |
| 4 | Prerequisites/corequisites | None |
| 5 | Program title | PhD in Biological Sciences |
| 6 | Program code | 04 |
| 7 | Awarding institution | The University of Jordan |
| 8 | School | School of Science |
| 9 | Department | Department of Biological Sciences |
| 10 | Level of course | Graduate |
| 11 | Year of study and semester (s) | 2023/2024 |
| 12 | Final Qualification | NA |
| 13 | Other department (s) involved in teaching the course | None |
| 14 | Language of Instruction | English |
| 15 | Teaching methodology | On campus lectures |
| 16 | Electronic platform(s) | <input checked="" type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input checked="" type="checkbox"/> Others: emails |
| 17 | Date of production/revision | Feb, 2024 |

18 Course Coordinator:

Office number, office hours, phone numbers, and email addresses should be listed.
Prof Dr Said Damhoureyeh; 105 Biology; Ext. 22213; saidd@ju.edu.jo

19 Other instructors:

None

20 Course Description:

As stated in the approved study plan.

This class is best described as a graduate course in population and community plant ecology. The course focuses on concepts and theory applying to single populations, species interactions (e.g. competition, herbivory, mutualism...etc.), and the structure and dynamics of multi-species communities. These topics are explored through lectures and student presentations.

21 Course aims and outcomes:

A- Aims:

This course has two major aims to:

1. Understand the basic concept of plant population and how it is different from animals.
2. Understand the mechanism of plant population dynamics and the seed banks.
3. Understand the different types of mechanisms to regulate plant populations.
4. Understand the matrix models used in calculation of growth parameters.
5. Understand plant communities and their biotic interactions.

B- Student's Intended Learning Outcomes (SLOs): Upon successful completion of this course students will be able to ...

By the completion of this course, students will be able to:

1. Understand the term plant population.
2. Recognize the different types of plant population regulation.
3. Describe the basic methods of growth parameters and how to calculate them.
4. Understand the major problems that affect plant and seed population dynamics.
5. Understand plant communities' structure and the different processes within these communities.
6. Understand the processes of dynamics in succession (Equilibrium vs non-equilibrium processes).
7. presentations and scientific writing.

22. Topic Outline and Schedule:



Plant Ecology (0304971)
Syllabus
3 Credit Hours

Department of Biological Sciences

| Week/ Lecture | Topic | SLO's | Teaching Methods*/platform | Evaluation Methods | References |
|------------------|---|-------|-------------------------------|-----------------------|---------------------|
| 1.1 | Introduction | 1 | In-class lecture | Q & A | Different resources |
| 1.2 | Overview of the course and review of the structure and function of ecosystems | 1 | In-class lecture | Q & A | Different resources |
| 2.1 | Population Ecology | 1 | In-class lecture | Q & A | Different resources |

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|------|---|------------------|--|-------|---------------------------------------|
| | Introduction | | | | |
| 2.2 | Concepts of Populations ecology | 1, 2 | In-class lecture | Q & A | Different resources |
| 3.1 | Population Dynamics, Processes | 1, 2 | In-class lecture | Q & A | Different resources |
| 3.2 | Demographic Processes and plant population dynamics | 1, 2, 3 | In-class lecture | Q & A | Different resources |
| 4.1 | Models and application,, Lefkovitch matrix | 1, 2, 3 | In-class lecture | Q & A | Different resources |
| 4.2 | Role of Seed banks | 3, 4 | In-class lecture | Q & A | Different resources |
| 5.1 | Life history patterns | 1, 2, 3 | In-class lecture | Q & A | Different resources |
| 5.2 | Reproduction and allocation | 1, 2, 3 | In-class lecture | Q & A | Different resources |
| 6.1 | Population structure | 1, 2, 3 | In-class lecture | Q & A | Different resources |
| 6.2 | Genetic variation | 1, 2, 3 | In-class lecture | Q & A | Different resources |
| 7.1 | Plant population regulations | 1, 2, 3 | In-class lecture | Q & A | Different resources |
| 7.2 | Plant species interactions | 1, 2 | In-class lecture | Q & A | Different resources |
| 8.1 | Types of interactions | 1, 2 | In-class lecture | Q & A | Different resources |
| 8.2 | Competition, types and patterns | 5 | In-class lecture | Q & A | Different resources |
| 9.1 | Plant-animal interaction | 5 | In-class lecture | Q & A | Different resources |
| 9.2 | Herbivory and seed Predation | 1, 2, 3, 5 | In-class lecture | Q & A | Different resources |
| 10.1 | Pollination and seed dispersal | 1, 2, 3, 5 | In-class lecture | Q & A | Different resources |
| 10.2 | Mutualistic relationships | 1, 2, 3, 5 | In-class lecture | Q & A | Different resources |
| 11.1 | Communities, structure and processes | 1, 2, 5 | In-class lecture | Q & A | Different resources |
| 11.2 | Diversity | 1, 2, 5 | In-class lecture | Q & A | Different resources |
| 12.1 | Equilibrium vs non-equilibrium processes | 1, 2, 3, 4, 5, 6 | In-class lecture | Q & A | Different resources |
| 12.2 | Vegetation sampling | 1, 2, 3, 4, 5, 6 | In-class lecture | Q & A | Different resources |
| 13.1 | Student presentations | 7 | In-class lecture Power point presentation | Q & A | Power point presentations using Teams |
| 13.2 | Student presentations | 7 | In-class lecture Power point presentation | Q & A | Power point presentations using Teams |
| 14.1 | Student presentations | 7 | In-class lecture Power point presentation | Q & A | Power point presentations using Teams |

Teaching method: Synchronous lecturing

Evaluation methods include: Midterm Exam, Final Exam, In class discussion
 Evaluation methods include: Term paper, Presentation

23 Evaluation Methods:

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

| Evaluation Activity | Mark | Topic(s) | Period (Week) | Platform |
|----------------------------------|-------------|-----------------|-----------------------|-----------------|
| Midterm Exam | 30 | | TBA | In-class exams |
| Final Exam | 40 | All topics | TBA | In-class exams |
| Term paper/ Presentations | 30 | Selected topics | Last week of teaching | In-class exams |
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24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

25 Course Policies:

A- Attendance policies:

B- Absences from exams and submitting assignments on time:

C- Health and safety procedures:

D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

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

26 References:

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

No specific text book is required, however the following references will be helpful:

Plant Population Ecology, 2nd ed. by Silvertown, 1987

Terrestrial Plant Ecology by Barbour, Burk and Pitts, 1987

Population Ecology, 3rd ed. by Begon, Mortimer and Thompson, 1996

Methods in Comparative Plant Population Ecology by David Gibson, 2002

Supplementary references will be given throughout the semester for each subject and these will include papers, figures, tables and other handouts

B- Recommended books, materials, and media:

27 Additional information:

Name of Course Coordinator: Prof Said Damhoureyeh

Signature: ----- Date: **27/ 02/ 2024**

Head of curriculum committee/Department:

Signature: -----

Head of Department:

Signature: -----

Head of curriculum committee/Faculty:

Signature: -----

Dean:

Signature: -----

Copy to:

Head of Department

Assistant Dean for Quality Assurance

Course File