Course Specifications

Course Title:	**Plant Ecology**
Course Code:	**4012242-3**
Program:	**BSc Biology**
Department:	**Biology Department**
College:	**Applied science**
Institution:	**Umm Al-Qura university**

Table of Contents

A. Course Identification

1. Credit hours:
2. Course type **a.** University ☐ College ☐ Department ■ Others ☐ **b.** Required ■ Elective ☐
3. Level/year at which this course is offered: **2nd Year / Level 4**
4. Pre-requisites for this course (if any)**:** **Plant kingdom (4012211-3)**
5. Co-requisites for this course (if any)**:**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		70 %
2	**Blended**		
3	**E-learning**		10 %
4	**Correspondence**		10 %
5	**Other**		10 %

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	**30**
2	**Laboratory/Studio**	**42**
3	**Tutorial**	**6**
4	Practical/Field work/Internship	**6**
5	**Others** (specify)	**10**
	Total	**94**
Other Learning Hours*		
1	**Study**	
2	**Assignments**	
3	**Library**	
4	**Projects/Research Essays/Theses**	
5	**Others** (specify)	
	Total	

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

This course will introduce students to major conceptual issues and areas of plant ecology. The course focuses on the factors that affect the distribution and abundance of plant species. The availability of water or nutrients, interactions with neighboring plants or animals. Soil formation, physical and chemical properties will be studied. Also, topics will include plant vegetation, types, and development. Some of the subjects covered are unique like vegetation sampling using quadrat and transect methods and major qualitative and quantitative characters of the plant community. Other topics, ecosystem, components of the ecosystem, recycling of nutrients and flow energy of the ecosystem are covered.

2. Course Main Objective

- The course is completed in one semester; which is approximately of 14 weeks duration.
- This course introduces the students to the concept of ecology, its divisions, components, and the relationships within the ecosystem.
- Also, this course deals with the factors affecting the plant growth in their environment (soil, temperature etc.). Plant vegetation, types and development.
- By the end of this course the students should
- Describe the ecosystem functional structure.
- Illustrate energy in ecological ecosystem.
- Illustrate the biochemical cycles.
- Illustrate the meaning of plant vegetation , types and development
- Exchange ideas, principles and information by oral, written and visual means.

Work effectively both in a team and independently.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	Understanding the plant ecology and their types.	
1.2	Summarize the different factors affecting the plants in their environment.	
1.3	Defining the meaning of the plant vegetation.	
1.4	List the physical and chemical properties of the soil.	
1.5	Recognize major quantitative and qualitative characters of plant community	
1.6	List the different types of quarters and transect.	
1.7	Describe the ecosystem functional structure.	
1.8	Illustrate energy flow in ecological ecosystem.	
1.9	Describe the biochemical cycles.	
2	**Skills :**	
2.1	Explain the different factors affecting the plant in the environment.	
2.2	Estimate the chemical and physical properties of the soil.	
2.3	Differentiate between sand and clay soil.	
2.4	Write the different stages of plant vegetation.	
2.5	Summarize major quantitative and qualitative characters of plant community.	

CLOs		Aligned PLOs
2.6	Predict the components in the grassland ecosystem.	
2.7	Diagram the nutrient cycle in nature	
3	**Competence:**	
3.1	Developing oral presentations.	
3.2	Communicating personal ideas and thoughts.	
3.3	Work independently and as part of a team to finish some assignments.	
3.4	Communicate results of work to others.	

C. Course Content

No	List of Topics	Contact Hours
1	General introduction of meaning of ecology and importance	**2**
2	Definition of Plant ecology, factors affecting the plant environment	**2**
3	Climatic factors (precipitation – temperature)	**2**
4	Light – Humidity- Wind- Evaporation	**2**
5	Physiographic factors Field trip.	**2**
6	Biological factor, plant-plant relationship- plant – animal relationship Inter-relations of Living Organisms (Mutualism, Commensalism, Parasitism)	**4**
7	Soil factor (soil formation, soil Origin, structure), Soil physical properties	**2**
8	Mid-term exam	**-**
9	Soil chemical properties, soil biology properties	**2**
10	Plant vegetation, types of plant vegetation, plant vegetation development	**2**
11	Vegetation sampling using quadrat and transect methods	**2**
12	Major quantitative and qualitative characters of plant community	**2**
13	Field trip	**-**
14	Structure of the ecosystem - Energy in ecological systems	**2**
15	Biogeochemical cycles	**2**
Total		**28 hrs**

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge**		
1.1	Understanding the plant ecology and their types.	-Self-studies to be included in exams. -Brain storming. -Discussion. -Home work. -Lectures	-Exam must contain questions that can measure these skills. -Practical quiz. Discussions after the -lecture.
1.2	Summarize the different factors affecting the plants in their environment.		
1.3	Defining the meaning of the plant vegetation.		
1.4	List the physical and chemical properties of the soil.		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.5	Recognize major quantitative and qualitative characters of plant community		
1.6	List the different types of quarters and transect.		
1.7	Describe the ecosystem functional structure.		
1.8	Illustrate energy flow in ecological ecosystem.		
1.9	Describe the biochemical cycles.		
2.0	**Skills**		
2.1	Explain the different factors affecting the plant in the environment.	The use of computers and the internet. -Research submitted by students. -Practical lessons. -Presentations made by the students and the use of documentary films and power point presentations.	-Semi- periodic examinations and productive discussions. -Assess the students in practical lessons. -Home business to assess and discuss the students. -Assess the skills of preparing research. -Evaluation of the students in the indirect decision of the syllabus.
2.2	Estimate the chemical and physical properties of the soil.		
2.3	Differentiate between sand and clay soil.		
2.4	Write the different stages of plant vegetation.		
2.5	Summarize major quantitative and qualitative characters of plant community.		
2.6	Predict the components in the grassland ecosystem.		
2.7	Diagram the nutrient cycle in nature		
3.0	**Competence**		
3.1	Developing oral presentations.	Oral presentations. -Internet search assignments and essays. -Incorporating the use and utilization of computer in the course requirements. -Students will be asked for delivering a summary regarding certain topics related to the course.	Evaluation of student essays and assignments. -Evaluating the laboratory written reports. -Marks given to for good reports and presentations -Evaluating during the discussion in lecture and reports. Part of the grad is put for student's written participation
3.2	Communicating personal ideas and thoughts.		
3.3	Work independently and as part of a team to finish some assignments.		
3.4	Communicate results of work to others.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	**Home works, search or presentation**	**4th and 8th weeks**	**10 %**
2	**Midterm "Written Test (1)"**	**8th week**	**20%**
3	**Final Exam "Practical Test"**	**15th week**	**30%**
4	**Final Exam Written Test**		**40%**

#	Assessment task*	Week Due	Percentage of Total Assessment Score
5			
6			
7			
8			

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

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

-Course lecturers are happy to answer all students' quires during or after the lectures, and they can be reached by personal meeting, phones or emails.

-All students have the e-mail of the course lecturers.

Office hours for the course organiser and lecturer of the course are given to students, this is at least 10 hours per week.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Molles M.C. (2008) Ecology. McGraw Hill, New York. Botkin D.B. Keller E.A. (2007) Environmental Science. Wiley, New York. Ricklefs R.E., Miller G.L. (2000) Ecology. John Wiley & Sons, New York.
Essential References Materials	
Electronic Materials	
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms, laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	data show, Smart Board
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Strategies for Obtaining Student Feedback on Effectiveness of Teaching	the Instructor or by the Department	• Questionnaires • Discuss students • Midterm and final tests. Former review.
Other Strategies for Evaluation of Teaching	the Instructor or by the Department	• Peer consultation by departmental specialized committee. Self-evaluation of the program by the departmental plan committee.

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	