

## SYLLABUS

Course Code	Course Num.	Course Name	Credit Hours	Lec.	Lab.	Tut.	Private study	Pre-requisites	Course Level	Language
BIO	251	Ecology and Biodiversity	2	1	2	0	4	BIO 121	3	English

### A. Course Description

This course has titles which will introduce biodiversity. So, this course involves basics of ecology, ecosystem services, ecosystem ecology, animals and plants communities, animals and plants biodiversity, biodiversity of Monera, Protista and Fungi, biodiversity of Fauna and Flora of Saudi Arabia.

### B. Course Outcomes

At the end of this course the student will be able:

1. To investigate the nature and diversity of life, from microorganisms and fungi to plants and animals.
2. To explore the mechanism of biodiversity: evolution through natural selection.
3. To learn how different groups of organisms interact and are dependent on their habitats and each other.
4. To use and expand this knowledge in laboratory classes by observing and describing specimens representing the variety of organisms.

### C. References:

#### Required Textbook

- Smith, R. L. and Smith, T. M. Elements of Ecology (2014). 9<sup>th</sup> edition Pearson Education. ISBN-13: 978-0321934185.
- M.J., S. Jennings, M. Attrill, Marine Ecology: Progresses, Systems, and Impacts. (2011). 2<sup>nd</sup> edition, Oxford Univ. Press, London. ISBN-13: 978-0199227020.
- Kalf, J. 2002. Limnology (2011). Pearson Education, Prentice Hall. 2<sup>nd</sup> edition. ISBN-13: 978-0130337757

#### Other references:

- [http://www.usc.edu.au/learn/courses-and-programs/courses/course\\_library/sci/sci102-biodiversity-and-ecology](http://www.usc.edu.au/learn/courses-and-programs/courses/course_library/sci/sci102-biodiversity-and-ecology)
- <http://podolskyr.people.cofc.edu/biol211>

**Course Website:** Google Classroom Webpage: <http://www.imamm.org/>

### D. Topics Outline

#### D1. Lectures Topics

- Biodiversity: What is it? Where is it? Where does it come from?
- What is biodiversity?
- Patterns in distribution of diversity
- Measuring diversity
- Basics of Ecology
- Why does diversity matter?
- Ecosystem Services
- Diversity-Function Models
- Pollination: Ecosystem services and diversity
- Population Ecology: Extinction/environmental degradation
- Community Ecology: Species Interactions
- Community Ecology: Predator-Prey Activity
- Ecosystem Ecology: Intro and Energetics
- Ecosystem Ecology: Carbon Cycle and Climate Change
- Climate Change and Disease Dynamics
- Island Biogeography
- Human Population Size
- Reconciliation Ecology
- Biotic and abiotic factors
- Animals communities
- Animals Biodiversity
- Plants communities
- Plants Biodiversity
- Biodiversity of Monera, Protista and Fungi
- Biodiversity of Fauna and Flora of Saudi Arabia
- Sustainability and the Future
- Revision

## D2. Laboratories Topics

- Lab 01 Safety and Laboratory, Introduction to Measurement
- Lab 02 Observations & The Scientific Method 1
- Lab 03 Observations & The Scientific Method 2
- Lab 04 Using and building identification keys 1
- Lab 05 Using and building identification keys 2

Lab 06	Plant Diversity 1
Lab 07	Plant Diversity 2
Lab 08	Botanical Garden
Lab 09	Animal Diversity 1
Lab 10	Animal Diversity 2
Lab 11,12	Invertebrates Diversity
Lab 13	Chemical analysis of Soil
Lab 14	Physical analysis of Soil
Lab 15	General revision

### E. Office Hours

Office hours give students the opportunity to ask in-depth questions and to explore points of confusion or interest that cannot be fully addressed in class.

### F. Exams & Grading System

The semi-official dates of the exams for this course are:

- **Midterm 1:** 6<sup>th</sup> or 7<sup>th</sup> week.
- **Midterm 2:** 11<sup>th</sup> or 12<sup>th</sup> week.
- **Quizzes& Homework:** During the semester.
- **Lab exam:** 15<sup>th</sup> week.
- **Final Exam:** 16<sup>th</sup> week.

Your course grade will be based on your semester work as follows:

<b>Midterm 1:</b> 15 %	<b>Midterm 2:</b> 15 %	<b>Lab exam:</b> 20%	<b>Final Exam:</b> 40 %
<b>Quizzes, Homework, Attendance &amp; Participation:</b> 10 %			

The grading distribution:

A+	A	B+	B	C+	C	D+	D	F
[95, 100]	[90, 95]	[85, 90]	[80, 85]	[75, 80]	[70, 75]	[65, 70]	[60, 65]	[0, 60]

## G. Student Workload

#	Teaching/Learning activities	Contact hours	Frequency	Total contact hours	Self-study hours	Total self-study hours	Student learning time
5	Lecture	1	15	15	2	30	45
2	Tutorial	0	0	0	0	0	0
0	Lab\practical	2	15	30	1	15	45
5	Homework	0	4	0	2	8	8
4	Quiz	0.5	2	1	1	2	3
6	Midterm	1.5	2	3	5	10	13
7	Final Exam	2	1	2	12	12	14
<b>Total</b>				<b>51</b>		<b>77</b>	<b>128</b>

The independent self-study is approximately 5 hours per week.

## H. Student Attendance/Absence

Only three situations will be considered as possible excused absences:

- Occurrence of a birth or death in the immediate family will be excused. (“Immediate family” is defined by the University as spouse, grandparents, parents, brother, or sister).
- Severe illness in which a student is under the care of a doctor and physically unable to attend class will be excused. Students are not excused for a doctor's appointment. Do not make appointments that conflict with rehearsals. Notes from the University Health Center will be accepted.

## Executive Rules for Study Regulations and Exams

[goo.gl/ykm7t3](http://goo.gl/ykm7t3)

