

General Botany

Department of Biological Sciences
University of Jordan

General Botany 0324251
First Semester 2010/2011

Course Description

Prerequisites: None
Credit Hours: Four: 3+1
Contact Hours: Three hours per week
Course period: Four months semester

Lecturer: *Prof. Dr. Dawud M. Al- Eisawi*
Office: The Herbarium and greenhouse building
Office Tel. 5355000 ext. 22227

Text Book: *Introductory Plant Biology*
12th, 2010
By:
Kingsley R. Stern
Publisher: Mc Graw Hill, Higher Education

Tentative Course Outline

<u>Lecture No</u>	<u>Topic</u>
1.	Introduction
2.	What is Plant Biology: Some Learning Goals, the Relationship of Humans to their environment, Botany as a science. Diversification of plant science.
3.	Cells (Cells, Eukaryotic versus Prokaryotic cells, cell structure and communication, cellular components, cellular reproduction, higher plant cells versus animal cells).
4.	Tissues (Meristematic tissues, tissues produced by Meristems).
5.	Roots and Soils (How roots develop, root structure, specialized roots, Mycorrhizae, root nodules, human relevance of roots, soils)

6. **Stems** (External form of a woody twig, origin and development of stems, tissue patterns in stems, specialized stems, wood and its uses)
7. **Leaves** (leaf arrangements and types, internal structure of leaves, stomata, Mesophyll and veins, specialized leaves, Autumnal changes in leaf color, Abscission, Human and ecological relevance of leaves)
8. **Flowers, Fruits and Seeds** (differences between Dicots and Monocots, structure of flowers, fruits, fruit and seed dispersal, seeds).
9. **FIRST HOUR EXAM**
10. **Plant Breeding and Propagation** (crop plant revolution, plant breeding, plant propagation).
11. **Plant Names and Classification** (Development of the Binomial system of Nomenclature, Development of the Kingdom concept.
12. Classification of the major groups, a key to major groups of organisms (Exclusive of Kingdom Animalia), Cladistics).
13. **Kingdom Protista** (features of Kingdom Protista, Algae, Phylum **Chlorophyta**-the (green algae).
14. Phylum **Chromophyta**, **Xanthophyta** (yellow- green algae), **Chrysophyta** (golden-brown algae), **Bacillariophyta** (**Diatoms**).
15. Phylum **Phaeophyta** (Brown algae), Phylum **Rhodophyta**-the red algae.
16. Phylum **Euglenophyta**- the Euglenoids, Phylum **Dinophyta**, the Dinoflagellates, Phylum **Cryptophyta**, the Cryptomonads, Phylum **Prymnesiophyta**.
17. Phylum **Charophyta**, the stoneworts. *Human and Ecological Relevance to the Algae.*
18. Other Members of Kingdom Protista, Phylum **Myxomycota** (The Plasmodial Slime Molds), Phylum **Dictyosteliomycota** (The Cellular Slime Molds), Phylum **Oomycota** (The Water Molds).
19. **Introduction to the Plant Kingdom Bryophytes** Phylum **Hepaticophyta**- (liverworts), Phylum **Anthocerotophyta**-Hornworts, Phylum **Bryophyta**- Mosses).

20.

SECOND HOUR EXAM

21.

The Seedless Vascular Plants: Ferns and Their Relatives (Phylum **Psilotophyta**, the whisk ferns, Phylum **Lycophyta**-the ground Pines, Spike Mosses, and Quillworts).

22.

Phylum **Equisetophyta**- the Horsetails and Scouring Rushes, Phylum **Polypodiophyta**- the ferns, Fossils).

23.

Introduction to Seed Plants: Gymnosperms (Phylum **Pinophyta**- the Conifers, other Gymnosperms, human relevance of Gymnosperms).

24.

Flowering Plants and Civilization (origin of cultivated plants, selected families of flowering plants, Dicots, Monocots).

Practical Plant Biology

<u>Lab No.</u>	<u>Topics</u>
1.	Introduction and orientation
2.	Tissues
3.	Roots
4.	Stems
5.	Leaves
6.	Flowers, Fruits, and Seeds
7.	<u>FIRST HOUR EXAM</u>
8.	Kingdom Protista (Green Algae, Red Algae, Diatoms).
9.	Kingdom Bryophyta (Brown Algae, Dinoflagellates).
10.	The Plasmodial Slime Molds, The Cellular Slime Molds, The Water Molds.
11.	The Seedless Vascular Plants: Ferns and Their Relatives
12.	Introduction to Seed Plants: Gymnosperms (
13.	Seed Plants: Angiosperms (Flowering Plants).
14.	<u>FINAL EXAM</u>

MARKS

<u>Mid-Term Exam</u>	<u>30</u>
<u>Midterm Practical Exam</u>	<u>10</u>
<u>Activities (presentation: term papers)</u>	<u>10</u>
<u>Subtotal</u>	<u>50</u>
<u>Final Written Exam</u>	<u>35</u>
<u>Final Practical Exam</u>	<u>15</u>
<u>Subtotal</u>	<u>50</u>
<u>TOTAL</u>	<u>100</u>

Other Reference:

1. Introductory Plant Biology, Nine edition, by Kingsley R. Stern. Wm. C. Brown publishers.
2. Botany: An Introduction to Plant Biology, Fourth edition, by James D. Mauseth. Saunders Collage publishing.
3. Biology of Plants, Fifth edition, by Raven P.H., Evert R. and Eichhorn. S. E. Worth publishers.
4. Morphology Plants and Fungi, Fifth edition, by Harold C. Bold, C. Alexopoulos, and T. Delevoryas. Harper Collins publishers.

المراجع: الأطلس النباتي- سوسن العوران و آخرون، 1996 ، عمادة البحث العلمي/
الجامعة الأردنية-عمان.