# Course Specifications

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|---|---|
| **Course Title:** | **Plant Kingdom** |
| **Course Code:** | **4012211-3** |
| **Program:** | **BSc Biology** |
| **Department:** | **Biology Department** |
| **College:** | **Applied science** |
| **Institution:** | **Umm Al-Qura university** |

## Table of Contents

## A. Course Identification

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|---|
| **1. Credit hours:** |
| **2. Course type**<br>**a.** University ☐ College ☐ Department ■ Others ☐<br>**b.** Required ■ Elective ☐ |
| **3. Level/year at which this course is offered:**<br>2nd Year / Level 3 |
| **4. Pre-requisites for this course** (if any)**:**<br>**General Biology (4011101-4)** |
| **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** | **45** |
| 3 | **Tutorial** | **6** |
| 4 | Practical/Field work/Internship | **6** |
| 4 | **Others** (specify) | **10** |
| | **Total** | **97** |
| **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

The course is an introduction to the plant kingdom, which includes general characters, methods of classification, and cultivation of viruses, chemical composition, as well as mechanism of replication in viruses. Classification and nomenclature of bacteria, morphological features of bacterial cell, and nutrition. Methods of growth, and reproduction in bacteria. Study of fungi, its economic importance, and general characteristics and classification. Study of algae, its

economic importance, general characteristics and its general classification on major levels. Study of non-vascular plants (Bryophyta, Pteridophyta) and flowering plants (Angiospermes and Gymnospermes).

**2. Course Main Objective**

After completing this course student should be able to:

- To enable students to understand the basis of knowledge of the plant kingdom and we'll show the basic principles, classification, general characters and distribution the different sections in the plant kingdom.
- To provide students with skills necessary for study of plant kingdom.
- To develop in the students' an awareness of the significance of plant kingdom.
- Evaluate the students to use the morphology in reclassification of plant kingdom based on the plant morphology and other characters.
- To train students in the proper use of the compound light microscope and to give them experience in interpreting images that they see through the microscope in terms of how plant structure is related to function.
- To provide students with skills in modern microscopic digital image capture, processing and analysis techniques useful in plant kingdom like algae, fungi, Bryophyta studies.

**3. Course Learning Outcomes**

| | CLOs | Aligned PLOs |
|---|---|---|
| 1 | **Knowledge:** | |
| 1.1 | Understanding basic information of the plant kingdom | |
| 1.2 | Gain more about the systematic and evolution of the plant kingdom | |
| 1.3 | Learning about Virus, Fungi, Algae, and their modifications | |
| 1.4 | Identifying the species based on morphology | |
| 1.5 | Knowing more the difference between different parts of plant kingdom | |
| 1.6 | How many differences between archegoniate and Spermatophyta | |
| **2** | **Skills :** | |
| 2.1 | Learning about Fungi, Bacteria and Algae identification | |
| 2.2 | Work in a team work and also independently in course work | |
| 2.3 | Consider the members of the group in the class and the time of lecture | |
| 2.4 | Cooperation with class member in discussing the results of work in class | |
| 2.5 | Oral and written communication | |
| 2.6 | Collecting samples from environment and examining samples in lab | |
| **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 | Introduction, study the general characters and the methods for classification systems of plant kingdom. | 2 |

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|---|---|---|
| 2 | Viruses, methods of cultivation and chemical composition, as well as the mechanism of replication.<br>Field trip for collecting samples. | 4 |
| 3 | Bacteria & Cyanobacteria (Classification and nomenclature of bacteria, study the morphological feature of the bacterial cell and the study of nutrition and methods of growth and reproduction). | 4 |
| 4 | Actinomycetes | 4 |
| 5 | Fungi (Economic importance of fungi, general characteristics of fungi and classification. Study of classes: Zygomycetes, Basidomycetes and Deutoromycetes. | 4 |
| 6 | Algae, economic importance, general characteristics and general classification of algae.<br>Field Trip for collecting samples. | 2 |
| 7 | Lichens morphology, internal structure and their impact in environment. | 2 |
| 8 | Non vascular plants (Bryophyta, Pteridophyta). | 4 |
| 9 | Flowering plants (Angiospermes and Gymnospermes) (Conifers, Flowers, Fruits). | 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 basic information of the plant kingdom | -Linkage between the previous and current information in the class<br>-Homework assignments<br>Discussions<br>Seminars and reports | -Quizzes during the class for short time<br>-Mid Term Test<br>-Homework's<br>-Assignment<br>-Final Exams<br>-Report Evaluation |
| 1.2 | Gain more about the systematic and evolution of the plant kingdom | | |
| 1.3 | Learning about Virus, Fungi, Algae, and their modifications | | |
| 1.4 | Identifying the species based on morphology | | |
| 1.5 | Knowing more the difference between different parts of plant kingdom | | |
| 1.6 | How many differences between archegoniate and Spermatophyta | | |
| **2.0** | **Skills** | | |
| 2.1 | Learning about Fungi, Bacteria and Algae identification | -Homework<br>-assignments<br>-Problem solving in the tutorial hours<br>-Internet Exploring | -Short quizzes at the time of class<br>-Mid-term and final exams<br>-Following the homework assignments<br>-Research groups, and seminars |
| 2.2 | Work in a team work and also independently in course work | | |
| 2.3 | Consider the members of the group in the class and the time of lecture | | |
| 2.4 | Cooperation with class member in discussing the results of work in class | | |
| 2.5 | Oral and written communication | | |
| 2.6 | Collecting samples from environment and examining samples in lab | | |
| **3.0** | **Competence** | | |

| Code | Course Learning Outcomes | Teaching Strategies | Assessment Methods |
|---|---|---|---|
| 3.1 | Developing oral presentations | Oral presentations.<br>-Internet search assignments and essays.<br>-Incorporating the use and utilization of computer in the course requirements.<br>-Students will be asked for delivering a summary regarding certain topics related to the course | -Evaluation of student essays and assignments.<br>- Evaluating the laboratory written reports.<br>-Marks given to for good reports and presentations<br>-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 | 3th and 8th weeks | 10 % |
| 2 | Quiz (1) | 5th week | 20% |
| 3 | Quiz (2) | 8th week | 10 % |
| 4 | Final Exam "Practical Test" | 15th week | 20% |
| 5 | Final Exam Written Test | | 40% |

***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 :**

## F. Learning Resources and Facilities

**1.Learning Resources**

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|---|---|
| **Required Textbooks** | - Lecture notes prepared by faculty member responsible for the course<br>- Campbell, *Mosses and Ferns* (London, 1906)<br>- Pearson, *The Hepaticae of the British Isles* (London, 1902)<br>- Dixon and Jameson, *The Student's Handbook of British Mosses* (London, 1896)<br>- Braithwaite, *British Moss Flora* (London, 1887-1905). (W. H. L.)<br>- David L. Jones and Stephen C. Clemesha. Australian Ferns and Fern Allies |
| **Essential References Materials** | - The Fungal Kingdom 1st Edition: J. Heitman, Barbara J. Howlett , Pedro W. Crous, Eva H. Stukenbrock,), Neil A. R. Gow, 2017.<br>- Wonders of the Plant Kingdom: A Microcosm Revealed, M. Harley, Rob Kesseler, and Wolfgang Stuppy, 2014.<br>- Plant Microtechnique and Microscopy. Steven E. Ruzin. Oxford University Press. 1999.<br>- The Plant Kingdom: A Guide to Plant Classification and Biodiversity, Theresa Greenaway, 1999. |

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| **Electronic Materials** | http://www.1911encyclopedia.org/Bryophyta<br><br>http://www.1911encyclopedia.org/Pteridophyta<br><br>Core Literature Project: Historical Monographs in Botanical Sciences<br>Glossary in preservation<br><br>http://www3.austincc.edu/catalog/descbiol.htm |
| **Other Learning Materials** | |

## 2. Facilities Required

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

# G. Course Quality Evaluation

| Evaluation Areas/Issues | Evaluators | Evaluation Methods |
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**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** | |