



Philadelphia University  
Faculty of Science  
Department of Biotechnology & Genetic Engineering  
Fall semester, 2009/2010

**Course Syllabus**

<b>Course Title: Practical General Biology 2</b>	<b>Course code: 240108</b>
<b>Course Level: 1</b>	<b>Course prerequisite (s) and/or corequisite (s): Practical General Biology 1 (240107)</b>
<b>Lecture Time: Tues. 09:10 – 12:00 Wed. 8:15 – 11:00</b>	<b>Credit hours: 1 Hour</b>

**Academic Staff Specifics**

<b>Name</b>	<b>Rank</b>	<b>Office No. &amp; Location</b>	<b>Office Hours</b>
<b>Maha Qadan</b>	<b>Lecturer</b>	<b>S-1016</b>	<b>Sun. &amp; Tues. 11:00 – 12:00 Mon. &amp; Wed. 11:00 – 02:00</b>

**Course module description:**

This course focuses on the following: plant and animal tissues, plant organs, animal organs and anatomy.

**Course module objectives:**

To acquire the basic biological concepts in the plant and animal tissues, plants organs, animal organs and anatomy.

**Course/ module components:**

- **Books (title , author (s), publisher, year of publication)**

**Title: Biology**

**Author(s)/Editor(s): Campbell and Reece**

**Publisher: Benjamin Cummings.**

**Year: 2008**

**Edition: 8<sup>th</sup> ed.**

- **Support material (s) (vcs, acs, etc).**

- Study guide (s) (if applicable)
- Homework and laboratory guide (s) if (applicable).

#### Teaching methods:

- Lectures, discussion groups, tutorials, problem solving, debates, etc.
- The use of microscopical slides, illustration with models, educational animations and movies.
- The use of the free website provided by the publisher over the internet.

#### Learning outcomes:

- **Knowledge and understanding**  
At the end of this module, students will be able to gain knowledge about:
  - the various fundamental biological concepts
  - the functional relationships at all levels of organization in animal and plant bodies
  - the anatomy of the various organs and systems of plants and animals
- **Cognitive skills (thinking and analysis).**  
At the end of this module, students will be able to develop their intellectual skills through understanding the concepts of biology and formulating questions and thinking of the appropriate answers to their questions.
- **Communication skills (personal and academic).**  
At the end of this module, students will be able to develop personal communication skills through participating in open-discussions with their colleagues and instructors.
- **Practical and subject specific skills (Transferable Skills).**  
At the end of this module, students will be able to:
  - improve their ability to search for information using various communication settings.
  - improve their ability to analyze data based on their understanding to the basic biological concepts.
  - benefit from all supplementary material provided with the textbook

#### Assessment instruments

- Short reports and/ or presentations, and/ or Short research projects
- Quizzes.
- Home works
- Final examination: 50 marks

<b>Allocation of Marks</b>	
<b>Assessment Instruments</b>	<b>Mark</b>
Mid-Term Exam	<b>30</b>
Final examination:	<b>50</b>
Reports, research projects, Quizzes, Home works, Projects	<b>20</b>
Total	<b>100</b>

**Documentation and academic honesty**

- **Documentation style (with illustrative examples)**
- **Protection by copyright**
- **Avoiding plagiarism.**

**Expected workload:**

**On average students need to spend 2 hours of study and preparation for each laboratory (i.e. 3 hours lab).**

**Attendance policy:**

**Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.**

Course/module academic calendar

Week No.	Lab No.	Topic
1	1	<ul style="list-style-type: none"> <li>• <b>Plant Diversity (1)</b></li> </ul>
		<ol style="list-style-type: none"> <li>1. Non-vascular plants               <ul style="list-style-type: none"> <li>- Hepatophytes (e.g. <i>Marchantia</i>)</li> </ul> </li> <li>2. Vascular plants (Seedless vascular plants)               <ul style="list-style-type: none"> <li>- Pterophytes (e.g. Ferns)</li> </ul> </li> </ol>
2	2	<ul style="list-style-type: none"> <li>• <b>Plant Diversity (2)</b></li> </ul>
		<ol style="list-style-type: none"> <li>3. Vascular plants (Seed plants)               <ul style="list-style-type: none"> <li>- Gymnosperms (e.g. <i>Pinus</i>)</li> <li>- Angiosperms:                   <ul style="list-style-type: none"> <li>- Dicot plants: Morphology of leaves, seeds, flowers, and roots.</li> <li>- Monocot plants: Morphology of leaves, seeds, flowers, and roots.</li> </ul> </li> </ul> </li> </ol>
3	3	<ul style="list-style-type: none"> <li>• <b>Plant Anatomy</b></li> </ul>
		<p>Plant tissues (Sections and Models):</p> <ol style="list-style-type: none"> <li>1. Stem (Dicot and Monocot)</li> <li>2. Root (Dicot and Monocot)</li> <li>3. Leaf (Dicot and Monocot)</li> <li>4. Woody stem</li> </ol>
4	4	<ul style="list-style-type: none"> <li>• <b>Plant Physiology</b></li> </ul>

<b>5</b>	<b>5</b>	<b>• The Prokaryotes</b>
		<ol style="list-style-type: none"> <li>1. Bacteria <ul style="list-style-type: none"> <li>- Airmicroflora</li> <li>- Morphology</li> <li>- Microscopy</li> <li>- Simple staining</li> </ul> </li> <li>2. Cyanobacteria <ul style="list-style-type: none"> <li>- <i>Oscillatoria</i></li> <li>- <i>Gleocapsa</i></li> </ul> </li> </ol>
<b>6</b>	<b>6</b>	<b>• Kingdom Protista</b>
		<ol style="list-style-type: none"> <li>1. The Euglenozoa <ul style="list-style-type: none"> <li>- Phylum Euglenophyta</li> <li>- Phylum Kinetoplastids</li> </ul> </li> <li>2. The Alveolata <ul style="list-style-type: none"> <li>- Phylum Ciliophora (Ciliates)</li> <li>- Phylum Apicomplexa</li> </ul> </li> <li>3. The Amoebozoa <ul style="list-style-type: none"> <li>- Phylum Entamoeba</li> </ul> </li> <li>4. The Stramenoplia <ul style="list-style-type: none"> <li>- Phylum Bacillariophyta</li> <li>- Phylum Phaeophyta</li> </ul> </li> <li>5. The Chlorophyta (The green algae) <ul style="list-style-type: none"> <li>- <i>Chlamydomonas</i></li> <li>- <i>Volvox</i></li> <li>- <i>Spirogyra</i></li> </ul> </li> <li>6. The Rhodophyta <ul style="list-style-type: none"> <li>- Phylum Rhodophyta</li> </ul> </li> </ol>
<b>7</b>	<b>7</b>	<b>• Mid-Term Exam</b>
<b>8</b>	<b>8</b>	<b>• Kingdom Fungi</b>
		<ol style="list-style-type: none"> <li>1. Phylum Chytridiomycota (<i>Chytridion</i>)</li> <li>2. Phylum Zygomycota (Bread mold)</li> <li>3. Phylum Ascomycota (Sac fungi)</li> <li>4. Phylum Basidiomycota (Club fungi)</li> </ol>

<b>9</b>	<b>9</b>	<ul style="list-style-type: none"> <li>• <b>The Invertebrates</b></li> </ul>
		<ol style="list-style-type: none"> <li>1. <b>Acoelomate (Sections and Specimens)</b> <ul style="list-style-type: none"> <li>- <i>Planaria</i></li> <li>- <i>Taenia</i></li> </ul> </li> <li>2. <b>Pseudocoelomate (Sections and Specimens)</b> <ul style="list-style-type: none"> <li>- <i>Ascaris</i></li> </ul> </li> <li>3. <b>Coelomate (Sections and Specimens)</b> <ul style="list-style-type: none"> <li>- Earthworm</li> </ul> </li> </ol>
<b>10</b>	<b>10</b>	<ul style="list-style-type: none"> <li>• <b>The Vertebrates</b></li> </ul>
		<ul style="list-style-type: none"> <li>• <b>Rat Anatomy</b></li> <li>1. <b>External anatomy</b></li> <li>2. <b>Internal anatomy</b> <ul style="list-style-type: none"> <li>- <b>Muscular system</b></li> <li>- <b>Digestive system</b></li> <li>- <b>Respiratory system</b></li> <li>- <b>Urinogenital system</b></li> </ul> </li> <li>• <b>Anatomy of the sheep heart (Model and Specimen)</b></li> </ul>
<b>11</b>	<b>11</b>	<ul style="list-style-type: none"> <li>• <b>Animal Tissues (1)</b></li> </ul>
		<ol style="list-style-type: none"> <li>1. <b>Epithelial tissue</b></li> <li>2. <b>Connective tissue</b> <ul style="list-style-type: none"> <li>- <b>Blood</b></li> <li>- <b>Cartilage</b></li> <li>- <b>Bone</b></li> </ul> </li> </ol>
<b>12</b>	<b>12</b>	<ul style="list-style-type: none"> <li>• <b>Animal Tissues (2)</b></li> </ul>
		<ol style="list-style-type: none"> <li>3. <b>Muscle tissue</b> <ul style="list-style-type: none"> <li>- <b>Skeletal muscle</b></li> <li>- <b>Smooth muscle</b></li> <li>- <b>Cardiac muscle</b></li> </ul> </li> <li>4. <b>Nervous tissue</b></li> </ol>

<b>13</b>	<b>13</b>	<ul style="list-style-type: none"> <li><b>Animal Development</b></li> </ul>
		<p>Slides and Models Different Embryonic stages</p>
<b>14</b>	<b>14</b>	<b>Final Exam</b>

### Module references

#### \* Books

1. N.A. Campbell & J.B. Reece (2008). *Biology 8<sup>th</sup> ed.* Benjamin Cummings.

#### \* Journals

#### \* Websites

Website: [www.campbellbiology.com](http://www.campbellbiology.com)

(Use your own access code provided with the textbook)