Course specification

University/Academy: Damnhour
Faculty/Institute: Science
Department Botany

1. course Data:

<table>
<thead>
<tr>
<th>Course code: Bot 402</th>
<th>Course title: physiology of algae, physiology of fungi and ecology of fungi</th>
<th>Academic year/level: 2010\2011 ---4\textsuperscript{th} year students / 2nd term ----</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialization:</td>
<td>No. of instructional units: lecture practical</td>
<td>3 practical</td>
</tr>
</tbody>
</table>

2. course Aim

- By the end of the course, students will be able to:
  - Realize the principles of photosynthesis and respiration in algae and know types of algal cultures

3. Intended learning outcome

a) Knowledge and understanding

By the end of the course, students will be able to:
A1: List the significant differences between photosynthesis and respiration.
A2: Describe the absorption spectra of chlorophyll \( a \) and chlorophyll \( b \).
A3: Mention the importance of the main features of each process and summarizes the light reactions, the dark reactions, glycolysis, the Krebs cycle, and the electron transport system.
A4: Illustrate the site of photosynthesis in a plant and the site of respiration

b) Intellectual skills

By the end of the course, the students are expected to develop higher order skills that are reflected in their ability to:
B1: Differentiate between Light-Dependent Reactions and Light-Independent Reactions.
B2: Formulate the major steps of photosynthesis
B3: Formulate the principles of respiration.
B4: Compare between different growth media of fungi.
B5: Evaluate the factor affecting on the photosynthesis and respiration processes in algae.

c) Professional skills

By the end of the course, students will be able to:
C1: Demonstrate and draw the organelles responsible for the photosynthesis and respiration process.
C2: Practice the different experiments to prove respiration in fungi and algae

- 1 -
C3: Practically prove the equation for photosynthesis in algae  
C4: Demonstrate Why do algae need this light?

d) General skills  
By the end of the course, students will be able to:  
D1: Exchange ideas, principles and information by oral, written and visual means.  
D2: Work effectively both in a team and independently.  
D3: Use the information technology to gather information and right reports.  
D4: Apply the basic knowledge of in handling and interpreting information.

| 4. course content | 1-Introduction in culture of algae  
|                   | 2-methods of measurement of growth of algae  
|                   | 3- nitrogen fixation by green algae  
|                   | 4- methods for measurement of fungal growth  
|                   | 5- media of growth and factors affecting growth of fungi  
|                   | 6-fungal flora I different environment  
|                   | 7- main genera of the fungal flora |

5. Teaching and learning methods  
Lectures and seminars.  
Lab work.  
Problems.  
Short reports.

teaching and learning methods for students with special needs

6. Student Assessment  
Quizzes.  
Mid term exam.  
Practical exam.  
Final term exam --------

a) Procedures used:  
Data show, overhead projector, simple microscopes, compound light microscopes and some prepared slides for botany samples.

b) Schedule:  
- Assessment 1: Quizzes Week: 4-7  
Assessment 2: Mid term exam Week: 8  
Assessment 3: Practical exam Week: 15  
Assessment 4: Final term exam Week: 16

c) Weighing of Assessment:  
--- Mid-Term Examination: 10
<table>
<thead>
<tr>
<th>Final-Term Examination:</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical Examination:</td>
<td>30</td>
</tr>
<tr>
<td>Semester Work:</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>150</td>
</tr>
</tbody>
</table>

**List of Textbooks and References:**

- Advanced Plant physiology
  - Advances in Photosynthesis and Respiration
  - Discoveries in Photosynthesis
    - 10.1007/1-4020-3324-9_111
    - Govindjee, J. Thomas Beatty, Howard Gest and John F. Allen
  - Chlorophyll a Fluorescence: A Signature of Photosynthesis
    - by George C. Papageorgiou, Govindjee
  - The Photosystems: Structure, Function and Molecular Biology by J. Barber (Editor)

**Course Notes**

- 

**Required Books (Textbooks)**

- 

**Recommended Books**

- 

**d) Periodicals, web sites,…etc**

- 

- [Website 1](http://www.biologie.uni-hamburg.de/b-online/e24/24b.htm)
- [Website 2](http://www.usd.edu/biocareers/risticb413sp2001/lec15.htm)
- [Website 3](http://www.pinkmonkey.com/studyguides/subjects/biology-edited/chap4/b0404501.asp)

**Course Instructor:**

**Date:**

**Head of Department:**}

**Date:**