COURSE OUTLINE

(1) GENERAL

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>NATURAL SCIENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACADEMIC UNIT</td>
<td>BIOLOGY</td>
</tr>
<tr>
<td>LEVEL OF STUDIES</td>
<td>UNDERGRADUATE</td>
</tr>
<tr>
<td>COURSE CODE</td>
<td>BIO_EU01</td>
</tr>
<tr>
<td>SEMESTER</td>
<td>5th</td>
</tr>
<tr>
<td>COURSE TITLE</td>
<td>GENETICS II</td>
</tr>
</tbody>
</table>

INDEPENDENT TEACHING ACTIVITIES
if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits

<table>
<thead>
<tr>
<th>Weekly Teaching Hours</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory and practicals (laboratory exercises)</td>
<td>6</td>
</tr>
</tbody>
</table>

Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).

<table>
<thead>
<tr>
<th>COURSE TYPE</th>
<th>Scientific</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSE TYPE</td>
<td>general background, special background, specialised general knowledge, skills development</td>
</tr>
<tr>
<td>PREREQUISITE COURSES:</td>
<td>There is no prerequisite course</td>
</tr>
<tr>
<td>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</td>
<td>Greek language</td>
</tr>
<tr>
<td>IS THE COURSE OFFERED TO ERASMUS STUDENTS</td>
<td>Yes, in English language</td>
</tr>
<tr>
<td>COURSE WEBSITE (URL)</td>
<td><a href="http://www.biology.upatras.gr/">http://www.biology.upatras.gr/</a></td>
</tr>
</tbody>
</table>

(2) LEARNING OUTCOMES

Learning outcomes
The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A
- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

Upon course completion, the students should be able to know the following subjects:
1. The genetic material structure,
2. The Central Dogma of Biology,
3. The genetic code,
4. The fine structure and function of the gene,
5. The gene molecular mutations, recombination and DNA repair,
6. The transposable genetic elements,
7. The genetic control of development,
8. The oncogenes and cancer,
9. The behavioral genetics
General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

- Search, analysis and synthesis of data and information, with the use of the necessary technology
- Adapting to new situations
- Decision-making
- Working independently
- Team work
- Working in an international environment
- Working in an interdisciplinary environment
- Production of new research ideas
- Project planning and management
- Respect for difference and multiculturalism
- Respect for the natural environment
- Showing social, professional and ethical responsibility and sensitivity to gender issues
- Criticism and self-criticism
- Production of free, creative and inductive thinking
-……
-……

- Autonomous work
- Teamwork
- Search, analyze and synthesize data and information, using the necessary technologies
- Promote free, creative and inductive thinking

(3) SYLLABUS

Theory

Laboratory Exercises
Mutagenesis in D. melanogaster.
Isozymes – electrophoresis.
Polytene chromosomes
Lyon’s hypothesis-Bar Body
Glutathione Transferase polymorphisms
(4) TEACHING and LEARNING METHODS - EVALUATION

<table>
<thead>
<tr>
<th>DELIVERY</th>
<th>Face to face</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</td>
<td>Lectures using slides and Power-Point presentations and support of learning through the e-class platform</td>
</tr>
</tbody>
</table>

**TEACHING METHODS**

The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.

The student’s study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS

<table>
<thead>
<tr>
<th>Activity</th>
<th>Semester workload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures and seminars</td>
<td>40</td>
</tr>
<tr>
<td>Laboratory exercises</td>
<td>15</td>
</tr>
<tr>
<td>Independent Study</td>
<td>95</td>
</tr>
<tr>
<td><strong>Course total</strong></td>
<td><strong>150</strong></td>
</tr>
</tbody>
</table>

**STUDENT PERFORMANCE EVALUATION**

Description of the evaluation procedure

Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.

1. Theoretical written examinations at the end of the semester (70% of the final grade), which evaluates student’s acquired knowledge and critical and creating thinking. Greek grading scale: 1 to 10. Minimum passing grade: 5
2. Written examinations on the laboratory exercises at the end of the experimental training (30% of the final grade, taken into account only if the student takes the minimum grade of 5 in the theoretical written examinations).

The evaluation is accessible to students through the electronic secretariat and internal announcements from the course professors.

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:
  1. P. J. Russell: iGenetics, Μια Μεντελική προσέγγιση
  2. W.S. Clug et al.: Βασικές Αρχές Γενετικής
  3. L. Hartwel et al.: Γενετική, από τα γονίδια στα γονιδιώματα

- Related academic journals: