COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	DEPT. OF ANIMAL PRODUCTION, FISHERIES AND AQUACULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**AS-300**	**SEMESTER**	**III**
COURSE TITLE	MICROBIOLOGY		

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*	**WEEKLY TEACHING HOURS**	**CREDITS**
	5	6
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	General background, Special background
PREREQUISITE COURSES:	General Biology
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO
COURSE WEBSITE (URL)	

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*

On successful completion of this unit, the students will be able to:

- **describe the diversity of micro-organisms and appreciate their role and importance in Nature and in the anthropocentric environment.**
- **comprehend the biology of micro-organisms and be acquainted with the commonest methods for their study and control.**
- **work within the microbiological laboratory using the simplest classical techniques.**

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

- **Working independently**
- **Working in an interdisciplinary environment**
- **Criticism and self-criticism**

3. SYLLABUS

- ✓ Historical preamble. The ramifications of Microbiology.
- ✓ The world of the micro-organisms; their role and importance.
- ✓ Classification and discrimination of the living organisms. Archaea, Eucarya, Procarya.
- ✓ Morphology and structure of bacteria; motility.
- ✓ Bacterial physiology, nutrition/metabolism and growth; reproduction and propagation.
- ✓ Essential Bacterial systematics. Main taxa of interest for the Dept..
- ✓ Eucaryotic microbes; fungi, algae, protozoa.
- ✓ Microbial culture, study and preservation methods.
- ✓ General virology. Methods for studying viruses.
- ✓ Natural activities and specializing usages of microbes; interactions with other (micro-)organisms.
- ✓ Antimicrobial practices.

4. TEACHING and LEARNING METHODS - EVALUATION

<table>
<tr><td>DELIVERY
Face-to-face, Distance learning, etc.</td><td>Face-to-face</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
Use of ICT in teaching, laboratory education, communication with students</td><td>Use of ICT in all teaching/learning activities.</td></tr>
<tr><td>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</td><td>
<table>
<tr><th>Activity</th><th>Semester workload</th></tr>
<tr><td>Lectures</td><td>39</td></tr>
<tr><td>Seminars and Laboratory practice</td><td>26</td></tr>
<tr><td>Non-directed study</td><td>85</td></tr>
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<tr><td>Course total</td><td>150</td></tr>
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<tr><td>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.</td><td>Greek language

Written or oral final examination (Conclusive) via:
– Multiple choise questions and/or
– Short-answer questions.
Minimum grade, 5,0/10,0.

In case of failure, the student should repeat the entire procedure.</td></tr>
</table>

5. ATTACHED BIBLIOGRAPHY

Suggested bibliography:

- M. T. Madigan et al. (2018). Brock: Βιολογία των Μικροοργανισμών. I.T.&E.-Πανεπιστημιακές Εκδόσεις Κρήτης [Κωδ. Ευδόξου: 77106995]
- G. Tortora et al. (2017). Εισαγωγή στη Μικροβιολογία (2η Έκδοση). Broken Hill Publishers Ltd. [Κωδ. Ευδόξου: 68373275]
- Α. Καραγκούνη-Κύρτσου (2012). Γενική Μικροβιολογία. Εκδόσεις Σταμούλη Α.Ε. [Κωδ. Ευδόξου: 22677089]