COURSE OUTLINE

(1) GENERAL

SCHOOL	NATURAL SCIENCES		
ACADEMIC UNIT	BIOLOGY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	BIO-ΣΤΥ1	**SEMESTER**	6th
COURSE TITLE	DEVELOPMENTAL BIOLOGY		

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**
Lectures	3	6
Lab Practicals	3	
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
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES
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*

Establishment of good background on basic concepts of developmental biology and of the main experimental animal models used in the field. Introduction in the main concepts of basic and applied regenerative biology and assisted reproduction technology.

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 towards the achievement of critical thinking.
Gain of experience in the use of image analysis software.
Further gain of experience in wet lab practice.

(3) SYLLABUS

1. Fertilization
2. Early embryonic development (mammals)
3. Early embryonic development (birds)
4. Basic developmental processes (cell migration, specification, differentiation)
5. Basic signaling and morphogenetic pathways
6. Development of endoderm (mammals)
7. Development of mesoderm (mammals)
8. Development of ectoderm- development of the brain (mammals)
9. Embryonic and adult (tissue-specific) stem cells
10. Developmental biology of Caenorabditis
11. Developmental biology of the sea urchin
12. Developmental biology of Drosophila
13. Developmental biology of Zebrafish
14. Comparative developmental biology of plants and animals

Methodology and Implementation of the teaching and pedagogical approach in Developmental Biology.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Lectures in the classroom
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of e-class environment. Exposure to image analysis software.
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*	

Activity	***Semester workload***
Lectures	12 X 2h 12 X 1h
Lab Practice 1. Fertilization in the sea urchin	5h of practice in 3 days and in groups of 25 students
2. Image analysis (immunohistochemistry)	2h of practice in groups of 25 students
3. Image analysis (time-lapse)	2h of practice in groups of 25 students 2h+2h of practice in groups of 25 students
4. Cell culture, differentiation	
Course total	

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.*	Written assessment

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:
BASIC PRINCIPLES OF DEVELOPMENTAL BIOLOGY
Code in Evdoxos database: 41959950
Author: J. M. W. Slack

- *Related academic journals:*