**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | Health Sciences |
| **ACADEMIC UNIT** | Department of Biological Applications & Technology |
| **LEVEL OF STUDIES** | Uundergraduate |
| **COURSE CODE** | ΒΕΕ706 | **SEMESTER** | 8th |
| **COURSE TITLE** | Cellular Communication and signal transduction |
| **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 |  |
| Student seminars | 3 |  |
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| *Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).* |  | 6 |
| **COURSE TYPE***general background, special background, specialised general knowledge, skills development* | Special background, and skills development |
| **PREREQUISITE COURSES:** | None |
| **LANGUAGE OF INSTRUCTION and EXAMINATIONS:** | Greek |
| **IS THE COURSE OFFERED TO ERASMUS STUDENTS** | No |
| **COURSE WEBSITE (URL)** |  |

1. **LEARNING OUTCOMES**

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| **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*
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| By the completion of the course, the students will possess the basic principles of cellular communication and signaling. They will be able to analyze recent articles in the domain. They will be familiar with the bibliography and will be able to present articles, participate in scientific discussions and design experiments.  |
| **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* *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**……**Others…**…….* |
| 1. Search for, analysis and synthesis of data and information, with the use of the necessary technology
2. Team work
3. Production of new research ideas.
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1. **SYLLABUS**

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| *The term Cultural Ecology emerged from the teachings of Julian Steward (1902-1972) and it was initially referred to the process by which a society is adapted to its environment. However today we are not talking about people's adaptation to specific environments, rather than about conceptualizations of Nature, as well as its social and cultural construction. In this context, the science of Cultural Ecology studies the relationship of specific societies with their natural environment and the life forms and ecosystems that this supports.*The course consists of the following topics:1. Introduction in the fundamentals of cell communication and signaling
2. Methodological approaches in the study of signal transduction
3. Second signals
4. GPCR type receptors
5. RTK type receptors
6. Nuclear receptors
7. Basic principles of transcription, activation of transcription factors
* Students present two seminars. The first one is based on review articles and the second is the presentation of a research paper.
* Every year there are 4 or 5 invited speakers presenting their research work
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1. **TEACHING and LEARNING METHODS - EVALUATION**

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| **DELIVERY***Face-to-face, Distance learning, etc.* | Face-to-face. Small group of 12-18 students |
| **USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY** *Use of ICT in teaching, laboratory education, communication with students* | Use of Power-point presentations for lectures and students workPosts for the course in e-courseAnnouncements at the Department’s websiteDirect communication with students through e-mail |
| **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* |

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| ***Activity*** | ***Semester workload*** |
| Lectures | 39 |
| Student seminars | 30 |
| Study of theory  | 45 |
| Seminars preparation | 50 |
| Examination | 6 |
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| Course total  | 170 |

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| **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.* | *Language of evaluation*: GreekMethod of evaluation:I.Written test (50%). Analysis and questions on understanding of a research articleII. Seminars and public presentation(50%) |

1. **ATTACHED BIBLIOGRAPHY**

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| *- Suggested bibliography:**- Related academic journals:** Το Κύτταρο: Μια Μοριακή Προσέγγιση, GeoffreyM. Cooper&RobertE. Hausman, ΑΚΑΔΗΜΑΪΚΕΣ ΕΚΔΟΣΕΙΣ, 2011 ISBN: 978-960-99895-1-0
* Biochemistry of signal transduction and regulation, G. Krauss, Wiley, 5th ed. 2014. ISBN:978-3-527-33366-0
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