**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | HEALTH OF SCIENCES |
| **ACADEMIC UNIT** | BIOLOGICAL APPLICATIONS AND TECHNOLOGY |
| **LEVEL OF STUDIES** | UNDERGRADUATE |
| **COURSE CODE** | **BEY307** | **SEMESTER** | **3** |
| **COURSE TITLE** | LABORATORY OF CHEMISTRY II |
| **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 AND LABORATORY PRACTICE | 4 | 6 |
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| *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)** |  |

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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| **The aim of the course is the understanding of how matter interacts with light and how conclusions are extracted about the structure and action of organic substrates. The students learn how to study the kinetics of a biological action,** how to isolate organic molecules from plants. Upon completion of the course, students will know the basic principles of spectroscopy and how they are applied in analytical methods and to study of biological processes. They will also be able to apply techniques used to isolate active ingredients from plants and how are separated and characterized in order to be used for further study. |
| **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…**…….* |
| * Search for analysis and synthesis of data analytical information with the use of the necessary technology
* Working independently
* Team work
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1. **SYLLABUS**

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| * Laboratory Safety
* Management of chemical reagents/waste
* Statistical data analysis of chemical analyses
* Laboratory results presentation
* Handling of/familiarity with laboratory glassware/equipment
* Study of the kinetic of chemical reactions
* Macromolecule interaction with the smaller molecule
* Isolation of organic molecules from plants performing continuous liquid extraction
* Quantitative and qualitative determination of anions in water performing High Performance Liquid Chromatography (HPLC)
* Spectroscopy in biological molecules
* Synthesis of acetylosalicylic acid (aspirin)
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1. **TEACHING and LEARNING METHODS - EVALUATION**

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| **DELIVERY***Face-to-face, Distance learning, etc.* | Face to face learning |
| **USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY** *Use of ICT in teaching, laboratory education, communication with students* | Laboratory educationCommunication with students |
| **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 | 10 |
| Laboratory practice | 60 |
| Written work report  | 40 |
| Independently study | 40 |
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| Course total  | ***150*** |

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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.* | The service module is assessed by written/oral exam daily, laboratory report and final exams  |

1. **ATTACHED BIBLIOGRAPHY**

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| *- Suggested bibliography:**- Related academic journals:*Organic Chemistry, John McMurry, Crete University Press |