**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | HEALTH SCIENCES |
| **ACADEMIC UNIT** | BIOLOGICAL APPLICATIONS AND TECHNOLOGY |
| **LEVEL OF STUDIES** | undergraduate |
| **COURSE CODE** | ΒΕY404 | **SEMESTER** | 3th |
| **COURSE TITLE** | BIOCHEMISTRY I |
| **INDEPENDENT TEACHING ACTIVITIES**  | **WEEKLY TEACHING HOURS** | **CREDITS** |
|   | 6 | 7 |
| **COURSE TYPE** | 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** |
| Course aims* Introduction to macromolecule structures and their interactions
* Introduction to scientific methodologies to study macromolecule structure and function
* Introduction to modern enzymology and the biological function of enzymes
* Structure and function of biological membranes
* Introduction to basic metabolic pathways (i.e. glycolysis, gluconeogenesis, citric acid cycle, oxidative phosphorylation)

By the end of the course, the students will:* Understand the function and structure of biological macromolecules (such as amino acids, proteins, lipids, carbohydrates) in living organisms and be acquiainted with their biochemistry
* Understand enzyme properties and kinetics
* Be familiar with basic metabolic pathways
* Be acquainted with basic laboratory biochemical methods

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| **General Competences**  |
| * Collection of scientific information and data using appropriate technologies
* Decision making, working independently
* Team working
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1. **SYLLABUS**

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| * Protein structure, function and protein analysis methods
* DNA and RNA
* Enzymes and mechanisms of enzyme action
* Carbohydrates
* Biological membranes
* Glycolysis-Gluconeogenesis
* Citric acid cycle
* Oxidative phosphorylation
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1. **TEACHING AND LEARNING METHODS – EVALUATION**

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| **DELIVERY** | Face-to face in the class  |
| **USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES**  | Εlectronic platform “Ecourse” Power point presentationsCommunication with students via email & Ecourse |
| **TEACHING METHODS** |

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| --- | --- |
| ***Activity*** | ***Semester workload (h)***  |
| Lectures | 39 |
| Laboratory courses | 18 |
| Interactive teaching | 3 |
| Individual study | 100 |
| Course total | ***160*** |

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| **STUDENT PERFORMANCE EVALUATION** | **Theory (80 %)** Final exam including open-ended and closed-ended questions**Laboratory courses (20%)**Reports for each laboratory session (50%)Laboratory exams (50%) |

1. **SUGGESTED BIBLIOGRAPHY**

1. Berg JM, Tymoczko JL, Gatto GJ, Stryer L. Bιοχημεία, Πανεπιστημιακές εκδόσεις Κρήτης (8η αμερικάνικη έκδοση)

2. Nelson DL, Cox MM. Lehninger's Βασικές Αρχές Βιοχημείας, Εκδόσεις Πασχαλίδης (7η αγγλική έκδοση)