**COURSE OUTLINE**

1. **GENERAL**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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**

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

1. **SYLLABUS**

|  |
| --- |
| * 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 |

1. **TEACHING AND LEARNING METHODS – EVALUATION**

|  |  |
| --- | --- |
| **DELIVERY** | Face-to face in the class |
| **USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES** | Εlectronic platform “Ecourse”  Power point presentations  Communication with students via email & Ecourse |
| **TEACHING METHODS** | |  |  | | --- | --- | | ***Activity*** | ***Semester workload (h)*** | | Lectures | 39 | | Laboratory courses | 18 | | Interactive teaching | 3 | | Individual study | 100 | | Course total | ***160*** | |
| **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)