**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | SCHOOL OF ENGINEERING |
| **ACADEMIC UNIT** | DEPARTMENT OF CIVIL ENGINEERING  |
|  | UNIVERSITY OF PATRAS |
| **POSTGRADUATE PROGRAM: TITLE** | Master’s Degree "Design of Resilient, Sustainable and Intelligent Infrastructures". Tracks:(A) Resilient Materials, Structures and Geotechnical Infrastructures,(B) Hydraulic and Environmental Engineering for Sustainable Infrastructures, and (C) Intelligent Systems in Transportation and Construction Project Management |
| **LEVEL OF STUDIES** | POSTGRADUATE PROGRAM |
| **COURSE CODE** |  | **SEMESTER** | SPRING (B’) |
| **COURSE TITLE** | **COASTAL ZONE MANAGEMENT AND PROTECTION** |
| **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 | 4 | 7.5 |
| *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* | Specialised knowledge |
| **PREREQUISITE COURSES:** | None |
| **LANGUAGE OF INSTRUCTION and EXAMINATIONS:** | Greek |
| **IS THE COURSE OFFERED TO ERASMUS STUDENTS** | NO |
| **COURSE WEBSITE (URL)** | https://eclass.upatras.gr/courses/CIV1777/ |

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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| Desired learning outcomes:1. Principles of coastal sediment transport and erosion.
2. Design guidelines of coastal protection works.
3. Basic principles of integrated coastal zone management.

Specific knowledge and competences:1. Computation of relative parameters for coastal sediment loads and morphodynamics.
2. Application of methodologies in the selection and design of coastal protection works.
3. 4. Specification of planning parameters of an integrated coastal zone management project.
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| **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…**…….* |
| * Working independently
* Project planning and management
* Respect for the natural environment
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1. **SYLLABUS**

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| 1. Nearshore processes and environmental pressures on the coastal zone: wave boundary layer, wave-induced currents, sediment transport and coastal morphodynamics.
2. Coastal protection works: coastal effect and design principles of groins, detached breakwaters and beach nourishment.
3. Anthropogenic pressures on the coastal zone.
4. Integrated coastal zone management.
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1. **TEACHING and LEARNING METHODS - EVALUATION**

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| **DELIVERY***Face-to-face, Distance learning, etc.* | Face-to-face |
| **USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY** *Use of ICT in teaching, laboratory education, communication with students* | Support of the learning process using the e-class platform |
| **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 |
| Final oral presentation | 0.5 |
| Study and preparation of project technical reports | 148 |
| ***Course total***  | ***187.5*** |

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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.* | Final oral presentation/examination: 25%Project technical reports: 75% |

1. **ATTACHED BIBLIOGRAPHY**

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| - Suggested bibliography:1. Ακτομηχανική και Λιμενικά Έργα. Καραμπάς, Θ, Δημας, Α., και Λουκογεργάκη, Ε., Εκδόσεις Δἰσιγμα, Θεσσαλονίκη 2020.
2. Coastal Engineering Manual. Engineer Manual 1110–2-1100, U.S. Army Corps of Engineers, Washington, D.C., 2002.

- Related academic journals:1. Coastal Engineering
2. Journal of Waterways, Port, Coastal and Ocean Engineering
3. Ocean Engineering
4. Journal of Coastal Research
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