

1.1.1 Design and Operation of Sea Transport Systems

GENERAL

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| SCHOOL | Engineering | | |
| ACADEMIC UNIT | CIVIL ENGINEERING | | |
| LEVEL OF STUDIES | Undergraduate | | |
| COURSE CODE | ΣΥΓ018 | SEMESTER | 9th |
| COURSE TITLE | Design and Operation of Sea Transport Systems | | |
| INDEPENDENT TEACHING ACTIVITIES <i>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</i> | WEEKLY TEACHING HOURS | CREDITS | |
| | 4 | 5 | |
| | | | |
| <i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i> | | | |
| COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i> | Specialization Course | | |
| PREREQUISITE COURSES: | | | |
| LANGUAGE OF INSTRUCTION and EXAMINATIONS: | Greek | | |
| IS THE COURSE OFFERED TO ERASMUS STUDENTS | No | | |
| COURSE WEBSITE (URL) | | | |

LEARNING OUTCOMES

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| <p>Learning outcomes</p> <p><i>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.</i></p> <p>Consult Appendix A</p> <ul style="list-style-type: none"> • 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 | | | | | | | | |
| <p>Upon completing the course students should be able to recognize the basic principles and specifications for the design, organization and operation of sea transport systems</p> <ul style="list-style-type: none"> • To acquire knowledge for the strategic and operational design of sea ports, combined transport and multimodal transport chain, as well as new technologies and intelligent systems in shipping and maritime transport • To acquire the ability to identify, analyze and interpret the necessary National, European and International legal framework. | | | | | | | | |
| <p>General Competences</p> <p><i>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?</i></p> <table> <tr> <td>Search for, analysis and synthesis of data and information, with the use of the necessary technology</td> <td>Project planning and management</td> </tr> <tr> <td>Adapting to new situations</td> <td>Respect for difference and multiculturalism</td> </tr> <tr> <td>Decision-making</td> <td>Respect for the natural environment</td> </tr> <tr> <td>Working independently</td> <td>Showing social, professional and ethical responsibility and sensitivity to gender issues</td> </tr> </table> | Search for, analysis and synthesis of data and information, with the use of the necessary technology | Project planning and management | Adapting to new situations | Respect for difference and multiculturalism | Decision-making | Respect for the natural environment | Working independently | Showing social, professional and ethical responsibility and sensitivity to gender issues |
| Search for, analysis and synthesis of data and information, with the use of the necessary technology | Project planning and management | | | | | | | |
| Adapting to new situations | Respect for difference and multiculturalism | | | | | | | |
| Decision-making | Respect for the natural environment | | | | | | | |
| Working independently | Showing social, professional and ethical responsibility and sensitivity to gender issues | | | | | | | |

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| <i>Team work</i> <i>Working in an international environment</i> <i>Working in an interdisciplinary environment</i> <i>Production of new research ideas</i> | <i>Criticism and self-criticism</i> <i>Production of free, creative and inductive thinking</i> <i>.....</i> <i>Others...</i> <i>.....</i> |
| <p>The course contributes to the following skills:</p> <ul style="list-style-type: none"> _ Search for, analysis and synthesis of data and information, with the use of the necessary technology _ Adapting to new situations _ Decision-making _ Project planning and management _ Respect for the natural environment. | |

SYLLABUS

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| <p>Introduction to maritime systems</p> <ul style="list-style-type: none"> • European policy on maritime transport • Maritime systems and technical terminology • Cargo and sea transport mode • Port organization characteristics: evolution and emerging trends • Demand and supply for shipping services • Port throughput, performance indicators and fares • Feasibility studies in maritime systems • Organization and management of ports and port facilities • Quality and safety management in maritime transport • Combined transport and multimodal transport chain • Short sea shipping and Motorways of the Sea • New technologies and intelligent systems in shipping and maritime transport. |
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TEACHING and LEARNING METHODS - EVALUATION

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| <p style="text-align: center;">DELIVERY</p> <p style="text-align: center;"><i>Face-to-face, Distance learning, etc.</i></p> | Face to face. | |
| <p style="text-align: center;">USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</p> <p style="text-align: center;"><i>Use of ICT in teaching, laboratory education, communication with students</i></p> | Powerpoint presentations, e-learning platform for educational material | |
| <p style="text-align: center;">TEACHING METHODS</p> <p><i>The manner and methods of teaching are described in detail.</i></p> <p><i>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.</i></p> <p><i>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</i></p> | Activity | Semester workload |
| | Lectures | 52 |
| | Individual study | 78 |
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| | Course total (26 hours workload per ECTS credit) | 130 |
| <p style="text-align: center;">STUDENT PERFORMANCE EVALUATION</p> <p><i>Description of the evaluation procedure</i></p> <p><i>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</i></p> | <p>Final written exam (100%) which includes:</p> <ul style="list-style-type: none"> - Open ended questions - Problem solving questions (exercises) <p>The evaluation criteria are presented in the 1st lecture of the semester to all students. Furthermore, each student can</p> | |

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.

see his graded exam/ written assignment paper and talk on the analysis of his written performance with the professor.

ATTACHED BIBLIOGRAPHY

- Giannopoulos, G.A. (2005). Maritime Transport. Epikentro Editions. ISBN: 978-960- 6645-21-1 [in Greek].
- Kostagiolas, P., Chlomoudis, K. (2011). Quality and Safety Management in Maritime Transport. Papazisis Editions, ISBN: 978-960-02-2568-6 [in Greek].
- Pardali A. (2007). Ports economics and policies. Stamoulis Editions, ISBN: 978-960-351-689-7 [In Greek].
- Profillidis, V. (2016). Transport Economics. Papasotiriou Editions, ISBN: 978-960-491-100-4 [in Greek].
- Tsaltas, G. (2008). Environment and Maritime Transport. In search of a sustainable approach. ΑΝΔΡΕΑΣ ΣΙΔΕΡΗΣ-ΙΩΑΝΝΗΣ ΣΙΔΕΡΗΣ ΣΙΑ Ο.Ε. Editions, ISBN: 978-960-08-0459-1 [in Greek].
- Lindgren, J. F., Brynolf, S., Wilewska-Bien, M., Andersson, K. (eds), (2016). Shipping and the Environment. Improving Environmental Performance in Marine Transportation. Springer Berlin, Heidelberg. ISBN 978-3-662-49043-3.