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| COURSE DESCRIPTION FORM |
| **Course Code and Title** | CE451 PORT PLANNING AND DESIGN |
| **Semester** | 8 |
| **Catalog description** | Classification of ports, Yacht tourism, The need for ports, Components of ports and functions, Space needed, Hinterland, Site selection, Wind and wave climate Topography and geological studies, Port studies, Planning and design, Navigation channel, Design of piers, design of breakwaters, Feasibility studies, Income and expenditure, Environmental impacts, Water quality, Pollution control, Protection of ecology,, Port Management, Presentation of port project. |
| **Required reading** | Planning and Design Guidelines For Small Craft Harbors, 2012.Third Edition, Government Printing Office, Washington, DC, USA |
| **Recommended reading** |  Marinas: The Complete Guide for Marina Selection, 2015.  [S.E. McDowell](https://www.amazon.com/Scott-E.-McDowell/e/B012109Y08/ref%3Ddp_byline_cont_book_1). Atlantic Publishing Group, USA.Coastal Engineering Manual, 2008. Army Coastal Engineering Research Center, 4. Edition, US. Government Printing Office, Washington, DC, USA. |
| **ECTS** | 4 |
| **Prerequisites and co-requisites** | No prerequisite.  |
| **Compulsory/Elective** | Technical elective course |
| **Language of instruction** | English |
| **Aim of course**  | The aim of the course is to teach required engineering methods in the port planning and design. |
| **Learning outcomes of the course unit** | 1. Application of mathematics, science and engineering skills.
2. Ability to design, formulate and solve engineering problems.
3. Oral and writing skills in Turkish and English.
4. To understand the social and global effects of engineering problems.
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| **Mode of delivery** | The mode of delivery of this course is face to face. |
| **Course content** | 1. Classification of ports, Yacht tourism, The need for ports,
2. Components of ports and functions, Space needed, Hinterland,
3. Site selection,
4. Wave theories
5. Wind and wave climate, Topography and geological studies, Port studies,
6. Planning and design, Navigation channel,
7. Design of piers,
8. Design of breakwaters,
9. 1. Midterm
10. Feasibility studies, Income and expenditure,
11. Environmental impacts,
12. Water quality, Pollution control,
13. Protection of ecology,
14. Port Management,
15. Presentation of port project.
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| **Planned learning activities and teaching methods** | 3 lecture hours per week (3+0)Project preparationReadingDesigning and applying materialsReport and presentation preparationMidterm exam and required worksFinal exam and required works |
| **Assessment methods and criteria** |

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| --- | --- | --- |
|  | Quantity | Percentage (%) |
| Mid-terms | 1 | 25 |
| Assignment | 2 | 10 |
| Exercises |  |  |
| Projects | 1 | 25 |
| Practice |  |  |
| Quiz |  |  |
| Contribution of In-term Studies to Overall Grade % |  | 60 |
| Contribution of Final Examination to Overall Grade (%) |  | 40 |
| Attendance | - | - |

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| **Workload** |

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| --- | --- | --- | --- |
| **Efficiency** | **Total Week Count** | **Weekly Duration (in hour)** | **Total Workload in Semester** |
| Theoretical Study Hours of Course Per Week | 14 | 3 | 42 |
| Practicing Hours of Course Per Week | 14 | 0 | 0 |
| Reading | 14 | 1 | 14 |
| Searching in Internet and Library | 2 | 0 | 0 |
| Designing and Applying Materials | 2 | 10 | 20 |
| Preparing Reports | 1 | 5 | 5 |
| Preparing Presentation | 1 | 0 | 0 |
| Presentation | 1 | 0 | 0 |
| Mid-Term and Studying for Mid-Term | 2 | 10 | 20 |
| Final and Studying for Final | 1 | 10 | 10 |
| Other | 0 | 0 | 0 |
| Total Workload: |  |  | 111 |
| Total Workload / 25: |  |  | 4.44 |
| ECTS: |  |  | 4 |

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| **Course's contribution to program** |

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| --- | --- | --- | --- | --- | --- | --- |
| No | Program Learning Outcomes | 1 | 2 | 3 | 4 | 5 |
| 1 | Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems. |  |  |  |  | X |
| 2 | Ability to identify, formulate, and solve complex civil engineering problems; ability to select and apply proper analysis and modeling methods for this purpose. |  |  |  |  | X |
| 3 | Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose. |  |  |  |  | X |
| 4 | Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in civil engineering practice; ability to employ information technologies and to use at least one computer programming language effectively. |  |  |  |  | X |
| 5 | Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex civil engineering problems or discipline specific research questions. |  |  |  |  |  |
| 6 | Ability to work efficiently in intra-disciplinary and multi-disciplinary teams.  |  | X |  |  |  |
| 7 | Ability to work individually. |  |  |  |  | X |
| 8 | Ability to communicate effectively in Turkish, both orally and in writing; ability to write effective reports and comprehend written reports.  |  |  |  |  |  |
| 9 | Knowledge of English of B1 level according to [Common European Framework of Reference](https://www.efset.org/english-score/cefr/). |  |  |  |  |  |
| 10 | Prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions. |  |  |  | X |  |
| 11 | Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself. |  |  |  |  |  |
| 12 | Consciousness to behave according to ethical principles and professional and ethical responsibility. |  |  | X |  |  |
| 13 | Knowledge on standards used in civil engineering practice. |  |  | X |  |  |
| 14 | Knowledge about business life practices such as project management, risk management, and change management. |  |  |  |  | X |
| 15 | Awareness in entrepreneurship, innovation; knowledge about sustainable development. |  |  |  |  |  |
| 16 | Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering. |  |  |  |  | X |
| 17 | Awareness of the legal consequences of engineering solutions. |  | X |  |  |  |

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| **Name of lecturer and contact information** |  Prof. Dr. Can E. Balas cbalas@gazi.edu.tr |