**Yeditepe University Civil Engineering Department**

**CE 492 Engineering Project**

**Proposal Form**

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| **Supervisors Name/s** | Asst. Prof. Dr. M. Adil Akgül |
| **Project Title** | Design and Optimization of a Marina in Güzelçamlı, Muğla, Turkey |
| **Project Reference No\*** |  |
| **Relevant course/s for the project** | CE 341, CE 354, CE 357 |

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| **Project Summary:** |
| The aim of this study is to make a design study for a simulated marina structure in the Güzelçamlı vicinity of Kuşadası, Muğla, Turkey. For this purpose, types of breakwaters will be defined and conventional types will be evaluated for the design. Rubble mound and a monolithic breakwater alternatives will be inspected and applied to the project site with the rubble mound either with or without superstructure, forming different alternatives. Design calculations will be carried out for each alternative and typical cross section drawings will be given for optimum designs. |

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| **Project Achievements:**  *(Please explain how the proposed project helps to achieve the performance criteria listed below)* | |
| **Identifying specific design objectives based on project requirements:** | 1. Determination of design waves from a simulated met-ocean report by considering wave approach angles 2. Design of a rubble mound breakwater with and without superstructure; optimization of design sections, execution of related engineering controls such as overtopping and crown wall forces. 3. Prelimiary design of a monolithic breakwater, determination of caisson dimensions. |
| **Gathering and using relevant information** | 1. Wind and wave data will be given together with the bathymetrical site map. 2. Design will be carried out acc. to national regulations and international standard EM 1110-2-1100. |
| **Analyzing alternatives using appropriate engineering knowledge** | 1. Different alternatives for the breakwater considering rubble mound with and without superstructure and monolithic types 2. Alternatives and evaluation of their optimum for rubble mound breakwater cross sections. |

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| **Considering the relevant constraints in the design:**  *(Please explain how the proposed project considers one or more limitations listed below)* | |
| **Economy**  **Environmental Issues/Sustainability**  **Manufacturability** | 1. Economical design of the structure by selecting suitable cross sections. 2. Knowledge on breakwater types and their environmental impacts 3. Knowledge on breakwater types and their limits of application in terms of manufacturability |

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| **Definition of outcomes linked to the objectives of projects** | “Engineering Project” aims the students to gain the  1) ability of usage their knowledge in mathematics, science and engineering,  2) ability to identify and solve complex engineering problems,  3) design experience,  4) ability to use modern tools and employ needed information technologies,  5) ability to conduct experiments if needed, gather data and analyze results,  6) routine of combining their individual creativity with teamwork,  7) oral and written presentation experiences in foreign language,  8) ability to access information and recognition of the need for following developments in science and technology,  9) awareness of professional and ethical responsibility,  10) information about business life practices like project management and risk management,  11) awareness of effects of their engineering practices on health, environment, and safety,  12) awareness of project award mechanisms and tendering procedures,  13) awareness of the interaction of designers and constructors.  *(Minimum requirements are;*   * *project timeline,* * *abstract,* * *Türkçe özet,* * *the definition of the problem,* * *the scientific information and literature review,* * *different design alternatives and decision criteria,* * *selection of optimum alternative* * *economical, sustainability, ethical issues* * *engineering drawing and demonstration methods while presenting the solution* * *appendix including standards, patents, brochures etc.)* |

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| **Approval of the Project Approved Not Approved**  State the reason(s) if not approved: | |
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| **Department Chair:**  Prof. Dr. Nesrin YARDIMCI TİRYAKİOĞLU | Signature |

*\* Project Ref.Numbers will be given by the Engineering Design Project Committee*