**Graduation Project Proposal**

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| Project Title | Dynamic characterization of a hollow beam |
| Classification | Research project  |
| Supervisor | Akın OKTAV |
| Abstract | Hollow beams are extensively used in engineering structures which are subjected to dynamic loads. The aim of the project is to identify the dynamic characteristics of an aluminum hollow beam with a rectangular cross section. First, analytical calculations will be performed to reveal the eigenfrequencies and eigen modes of the structure. Then, a finite element model will be constructed to simulate the dynamic characteristics of the structure. Finally, an experimental modal analysis study will be performed to complement and to verify the results. A manuscript will be prepared to report the outcomes of the project. |

The graduation project is the subject of the MEC 401 Mechanical Engineering Design and MEC 402 Graduation Project courses offered in the 7th and 8th semesters, respectively.

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| Course Name | MEC 401 Mechanical Engineering Design |
| Prerequisites | MEC 308 / Theory of Machines II |
| Corequisites | None |
| Requirements | Basic knowledge of a finite element analysis package |
| Workflow | * Literature survey
* Analytical calculations
* Midterm presentation
* Construction of the finite element model
* Computational analysis
* Comparison of the analytical and computational results
* Project report
* Final presentation
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| Course Name | MEC 402 Graduation Project |
| Prerequisites | MEC 401 Mechanical Engineering Design |
| Corequisites | SEC 402.4 Mechanical Vibrations |
| Requirements | None |
| Workflow | * Experimental studies
* Comments on the results
* Midterm presentation
* Project report
* Final presentation
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| Term |  |
| Date |  |
| Project Title |  |
| Supervisor Name and Signature |  |
| Students |
| First Name | Last Name | Student Number | Signature |
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