**Graduation Project Proposal**

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| Project Title | Shrink-Fit Problem of Composite Thick-Walled Cylindrical Pressure Vessels |
| Classification | Research project |
| Supervisor | Sefa YILDIRIM |
| Abstract | The study examines closed-form solutions for radial and tangential stresses in thick-walled cylinders for cases of homogeneous isotropic, nonhomogeneous isotropic, and homogeneous orthotropic using the infinitesimal theory of plane elasticity. Using these solutions, the radial and tangential shrink-fit stress distributions will be calculated in dimensionless form. |

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 201 Strength of Materials I |
| Corequisites | MEC 110 Introduction to Scientific Programming |
| Requirements | Basic knowledge of a scientific programing package |
| Workflow | * Literature survey * Analysis of stresses * Stress analysis of thick-walled cylinders * Analysis of shrink fit stresses * Project report * Final presentation |

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| Course Name | MEC 402 Graduation Project |
| Prerequisites | MEC 401 Mechanical Engineering Design |
| Corequisites | MEC 110 Introduction to Scientific Programming |
| Requirements | Basic knowledge of a scientific programing package |
| Workflow | * Stress distributions in shrink-fitted identical homogeneous isotropic cylinders * Stress distributions in shrink-fitted identical nonhomogeneous isotropic cylinders * Stress distributions in shrink-fitted identical homogeneous orthotropic cylinders * Stress distributions in shrink-fitted homogeneous orthotropic cylinders with different material properties * Comments on the results * 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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