

Graduation Project Proposal

Project Title	Vibroacoustic modelling and experimental verification of aluminium honeycomb sandwich panel
Classification	Research project
Supervisor	Akın OKTAV
Abstract	Although there are studies on modelling the dynamic behaviour of aluminium honeycomb sandwich panels in the literature, it is seen that there are limited studies to experimentally verify the vibroacoustic models of these structures. In the proposed project, it is aimed to verify the vibroacoustic model of the aluminium honeycomb sandwich panel with experimental modal analysis and microphone measurements. The sound transmitted by the panel through airborne and structure-borne paths will be measured by computational analysis and experimentally with microphones and a study will be carried out aiming to verify the vibroacoustic model.

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.

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	<ul style="list-style-type: none"> • Literature survey • Construction of the finite element model • Computational analysis • Midterm presentation • Experimental modal analysis • Comparison of the experimental and computational results • Project report • Final presentation

Course Name	MEC 402 Graduation Project
Prerequisites	MEC 401 Mechanical Engineering Design
Corequisites	SEC 402.4 Mechanical Vibrations
Requirements	None
Workflow	<ul style="list-style-type: none"> • Structure-borne sound verification • Comments on the results • Midterm presentation • Air-borne sound verification • Project report • Final presentation

