

IZTECH ME401 Project Proposal**Advisor(s): Serhan Özdemir****Project title: Designing a Variable Stroke and Frequency Shaker for Fatigue Tests for Mechanical Parts****Number of groups: 1****Number of students in each group: 3****Is the project within the scope of Co-Op Extended?: No.****Project Background:**

Please describe the background and motivation of the project with several sentences.

Shakers are used to test certain mechanical parts at various strokes and frequencies. The team is expected to design a shaker at 25 W power whose frequency and stroke are adjustable via buttons located on the device.

Project Objective:

Please list main project goals.

- Design the control circuit.
- Design an lcd interface,
- Design a commercially attractive case

Project Design Criteria:

Please list measurable and non-measurable criteria that would be useful in evaluating the success of the project.

- Understanding the current devices, their circuitry, and how they work,
- Understanding the basics of power electronics,
- An adjustable frequency and stroke.
- A finished and operating device.

Expected Outcomes:

Please describe the expected outcomes or deliverables (physical or theoretical) of the project.

The prototype device is expected to deliver the desired amplitude at the desired frequency which are input by the user.

Sustainable Development Goals:

Please describe any potential impact on the field or society. You may want to reference the UN SDGs. (<https://sdgs.un.org/goals>)

Literature Survey Subjects:

Please list fundamental research topics to guide students. There should be as many different subjects as the number of people in a group.

- Watch teardown videos about ultrasonic devices on Youtube,

- Read the relevant articles and discussions on the net.
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Please write your notes below, which you find useful for students to know about the project.

You can set criteria such as min. GPA of each student or min average GPA of the group.

This project is not for the tourists and bird watchers. Only engineers please.