

ME 424/BME 424 Engineering Acoustics
2017 - Project description

Project Proposal due: October 5 in class.

Progress Report due: November 9 in class.

Project Presentations: last week of classes.

Final Report due: December 12 at 5:00pm

Objective: The purpose of this project is to allow you to apply the techniques of this course either to explore a particular acoustical system (by considering its design or modeling) or to advance your theoretical understanding of acoustics. A secondary goal is to foster efficient team work and time management skills and to provide practice for effective oral and written presentation of technical matter.

Teams and Effort: Teams are formed by you and are to consist of 1–4 members. Once you and your group have decided on a project, it is expected that each member of the team will spend roughly 20–40 hours on the project over the entire semester.

Project Proposal: The project topic will be selected by your team. A short proposal (one or two pages) is due in class October 5. The proposal must include a 1) title, 2) a list of team members, 3) motivation/background for the project topic, 4) the objective of the project, and 5) a project plan describing the steps you will perform to accomplish your objective.

Progress Report: A one page progress report will be turned in November 9, in class. This report should include a summary of the original (or modified) project objective and plan along with your current status in the project.

Final Report: Final reports are due December 12 (last day of class) at 5:00pm. These reports are to include a summary of the project proposal (with any modifications made along the way), a description of completed tasks, results, conclusions, recommendations for future work, and references. The report, including all figures and references, should be approximately 10 pages long, with 12 pages being the maximum length; reports longer than 12 pages or with unreasonably small fonts or page margins may be penalized.

Presentation: Final presentations will be given in the last week of class. The amount of time allotted each group will depend on the number of members in the group. Each group member will give a portion of the presentation.

Grading: The presentation will be weighted 33% and the final report 67% in computing your project grade.

Suggestions: The format of the project is flexible. You may research and analyze an acoustic system of interest to you (woodwinds, hearing aides, loudspeakers). You may perform a literature review to broaden your understanding of a topic. You may perform a numerical simulation of a system; you should consider how the numerical results compare with more simple analytic results obtained in class. Ask me for ideas and more suggestions as you prepare your proposal. Overall, you should look at this as an opportunity to follow your curiosity and educate your fellow students.