

ME403: Activity 1 “Project Selection”

Assignment Overview:

The Senior Design Project is an extremely open-ended process, which starts with your defining a problem or project for which you'd like to design. In a traditional university setting, set projects are established each semester for new projects, often involving industry sponsorship or other time-driven design pursuits. Many times, these projects can also be in conjunction with an engineering design competition, where individuals or teams engage in a design project for a structured competition with other teams and their designs.

For this course, the project derivation and selection process will remain largely open to you, the student. Below are ideas for project directions that may be of interest or pertinent to your interests or needs. While some students may be drawn to a structured competition, others may find that there exists a need within their community for an engineering solution. It is strongly encouraged that, if possible, you attempt a design project that you will find interesting and rewarding, since you will be engaging in a large time commitment toward its completion.

Potential Design Project Ideas:

Student Design Competitions:

Please follow the links for more information, including rules and constraints.

- [ASME Student Mechanism and Robot Design Competition](#)—Robotics/Mechatronics
- [ASME Human Powered Vehicle Challenge \(HPVC\)](#)—Multiaspect
- [ASME Student Design Competition](#)—Changes yearly, multiaspect
- [NASA Great Moonbuggy Race](#)—Multiaspect
- [AIAA Undergraduate Individual Aircraft Design Competition](#)—Aeronautics
- [ASHRAE Student Design Project Competition](#)—Changes yearly, HVAC
- [Small Size Robot Soccer League](#)—Robotics/Mechatronics
- [SAE Aero Design](#)—Aeronautics

Other Design Ideas:

If you wish to pursue a noncompetition-based design, make sure it is a nontrivial project, which requires going through a significant design process, which uses your newly learned mechanical engineering skills. Potential ideas are listed here, but you are encouraged to look to your community or organization for ideas which you can

implement. Please note that, unlike project-based design competitions, these projects will require you to come up with your own concrete project definition and end goals.

- [Affordable Transportation Design](#)—Formally a competition (and it may become one again), this focuses on designing a versatile, affordable vehicle to benefit low-income areas
- Low-cost, efficient energy sourcing (wind or hydro turbine, solar heating, etc.)
- Cost effective water purification/desalination and delivery systems
- Mobility devices for disabled individuals
- Your own design idea!

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