

Capstone Design

ME/MSE/ID/BME/ECE

Common Studio Session #2

Date: 08/25/2025

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REMINDERS

- ALL Links and Slides are posted here: <http://mecapstone.gatech.edu/students>
- Common MS Teams Support Network: <https://mecapstone.gatech.edu/support>
- Team – Project – Faculty Assignments available at:
<https://mecapstone.gatech.edu/assignments>
 - Your team's **primary advisor** if the first faculty listed at the **far left** (in case more than one faculty are assigned as advisors for your team)

Course Logistics (starting this week)

- **Studios** on Mondays for all ME and MSEs, except those with Prof. Li as primary advisor:
12:30 – 2:25pm in KLAUS #1443
- **Labs** on Wednesdays 12:30 – 3:15pm at location TBD
 - Labs are scheduled to work with your team AND discuss your project progress with your team's advisor.
 - Wait for an email from your primary advisor for instruction on when and where to meet this Wednesday
 - Typically, teams meet with their advisor 30-60 minutes per week during this time slot
 - Specific plan (meeting time, date and activity) MAY VARY based on the Instructor assigned to your team
 - Plan to present an overview of the [problem statement and organization](#)

Today's Topics

1. User Needs, Design Specifications, etc.
2. Market Research and Prior Art
3. W1. Workshop on Team Charter and Expectation Management

Existing Products, Prior Art and Applicable Patents

- Provide information on current competitive products/procedures. Discuss their relevance to the problem and/or its potential solutions. Draw learning and opportunities from the identified sources.
 - Document and discuss any competitive designs already on the market, or in research and development. Consider:
 - What are the commercial applications of the technology?
 - How does the underlying technology work?
 - Perform a patent search and identify related concepts
 - Discuss how existing products, prior art, related art, and patents are relevant to or different from your intended design, with technical detail to support your discussion (power, weight, cost, etc.)

Market Research/Potential Impact

- Describe market research plans such as customer surveys, focus groups, gathering market information from studies, internet, experts, etc.
- Describe the results of market research including market size, demographics, target price, go-to-market strategy, number of potential procedures/uses per year (with references, information on current competitive products/procedures, target market sales price; with a brief justification comparing to predicate device(s) or methodologies
- Discuss impacts, if any, of your market research on the design
- Discuss/provide any client reviews and user evaluation, if applicable
- Try to quantify, where possible, the **potential economic impact** of your project for the client, sponsor, or customer for your design project. For instance, if the project reduces energy consumption, calculate the estimated energy savings in kilowatt-hours (kWh) or percentage reduction in energy consumption. If it improves a process, estimate time or cost savings in terms of reduced labor hours, materials, or maintenance expenses.

Additional Reminders:

- 8/29: Deadline to complete watching a 15-minute video and upload teaming certificate on CANVAS
- Come Prepared for **Ideation Workshop** on 9th September
 - Each team to:
 - Assign a team **spokesperson**
 - Develop the functional breakdowns (**function tree**) for your project and identify few critical functions that need creative exploration of the solution space
 - Workshop will be focused on using mind maps and exploring novel alternatives.



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Meeting Dates

Sep. 12, Oct. 10, Oct. 31

11:30-12:30