

# ME4182 – Capstone Design

## Fall 2020

You are part of an experiment to create the most high-profile, rewarding, expensive, hard-working course at Georgia Tech and a model for design education at engineering schools worldwide

# What is Capstone Design all about?

## Goals for the course:

**1. Identify an unmet need**

**WHAT'S THE PROBLEM?**

**2. Invent/design something useful**

**CREATIVITY, INNOVATION**

**3. Apply your analytical knowledge to design it**

**ANALYTICAL SKILLS**

**4. Prove it will work (Simulate it, build it, test it, virtually, physically)**

**MODELING AND HANDS-ON**

**5. Document your process (reports, presentations)**

**6. Demonstrate it at the Expo**

**7. Give to sponsor for use or patent it and start company**

# Project Types

1. External company sponsored

2. Faculty Research Lab

3. Your own idea!

- Check out currently available projects (**more are being added**) here:  
<http://capstone.gatech.edu/marketplace>
  - You will need to set your password using the link in your email from [web-capstone@mail.gatech.edu](mailto:web-capstone@mail.gatech.edu)
  - Starting Friday, you will be able to access the site using your GT login credentials
- For guidance on how to use the online portal, see this:  
<http://capstone.gatech.edu/howto>
- Examples of past projects (from Summer 2020) are here:  
<http://capstone.gatech.edu/projects/>

# Elements of a Good Student Project

- What's the problem?
  - NOT “We're going to design a better mousetrap”
- Creative/Innovative - not just an assembly of off-the-shelf parts (room for novelty)
- Lends itself to analysis
- Sufficient scope for senior design
- Team should have or acquire the skills to complete the project.
- Produce a proof-of-concept and learn from it
  - Design revisions
  - Validate design decisions

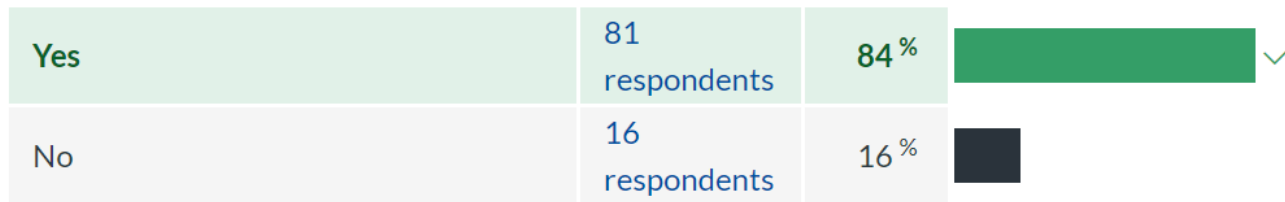
# How to form a team?

- Team sizes are 4-6 students per team.
- Find team members
  - Based on project interest on <https://capstone.gatech.edu/marketplace>, **or**
  - Based on skills and experience on <https://capstone.gatech.edu/marketplace>
  - Self-identified/assembled during lab meeting on 19<sup>th</sup> August.

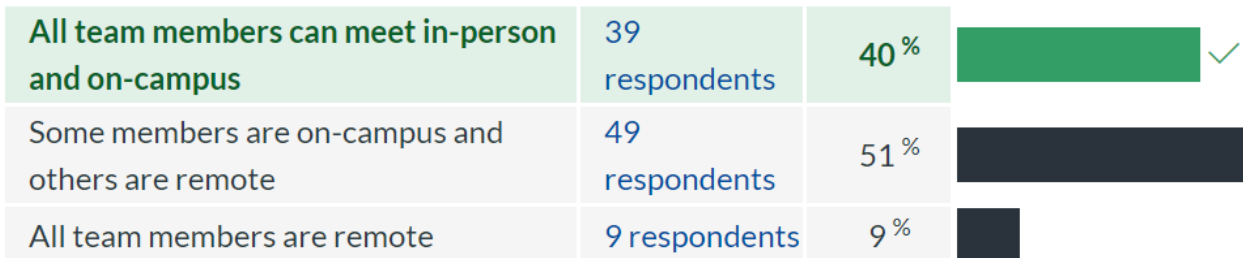
# ME 4182 Statistics

Would you be able to attend in-person and on-campus course activities during scheduled lab times?

Course activities include meetings with instructors, team members as well as utilizing any on-campus lab/makerspace resources.



What team members would you prefer for your course project? Note that a typical team has 4-6 team members. We will make every possible effort to help you form a team of your choice, however, we DO NOT guarantee that your team preferences will be honored.

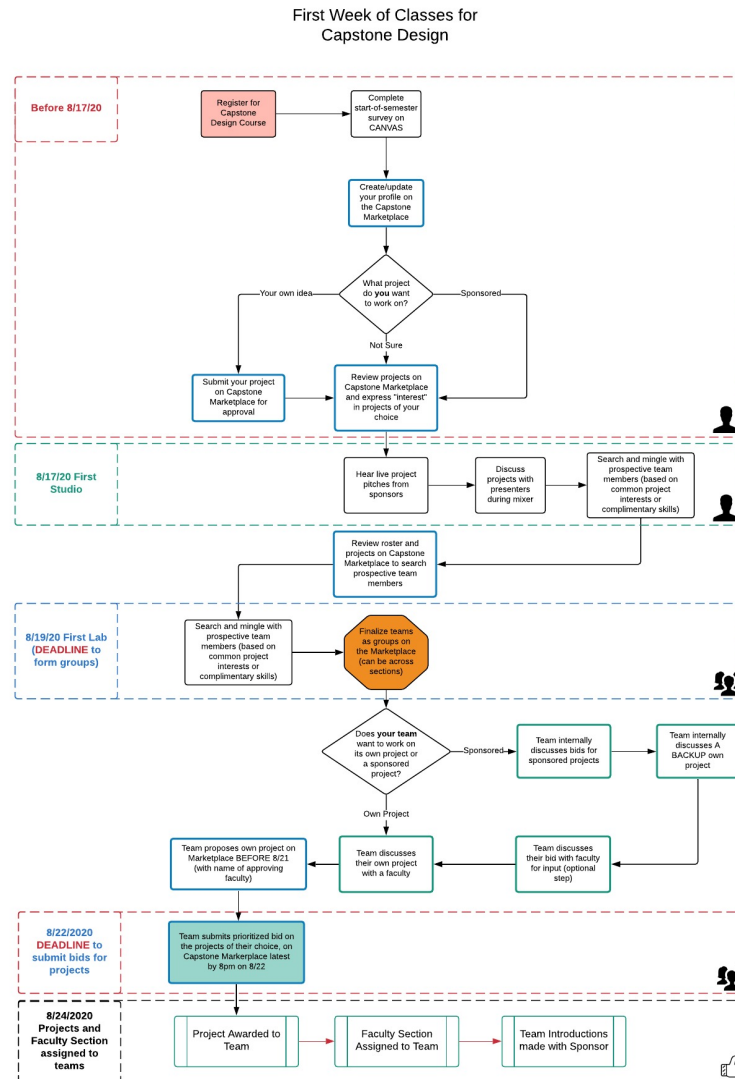


# Interdisciplinary Capstone Design team logistics

- Primary advisor for the ME4723 team is determined based on the majority discipline of the team.
- Primary advisor meets with the entire team on a weekly basis during the scheduled lab session
- Faculty from other schools represented in the ME4723/ECE4873/BMED4873 team serve as secondary advisors.
- Secondary advisors meet with the team on as-needed basis and make sure that the team follows any discipline specific requirements.

# Timeline Flowchart for Week #1

- Check this LINK: [https://app.lucidchart.com/documents/view/4bec40f8-5061-575f-b745-06150a7cefd9/0\\_0](https://app.lucidchart.com/documents/view/4bec40f8-5061-575f-b745-06150a7cefd9/0_0)

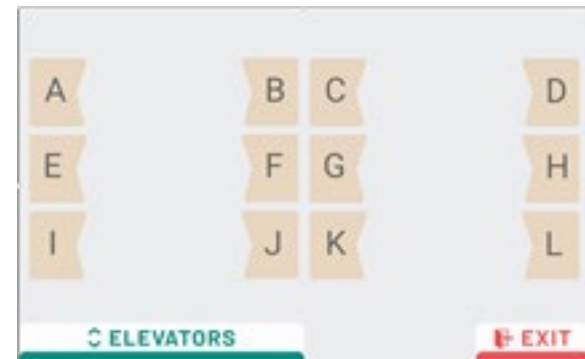




# Plan for Day 1: Studio on 17<sup>th</sup> August

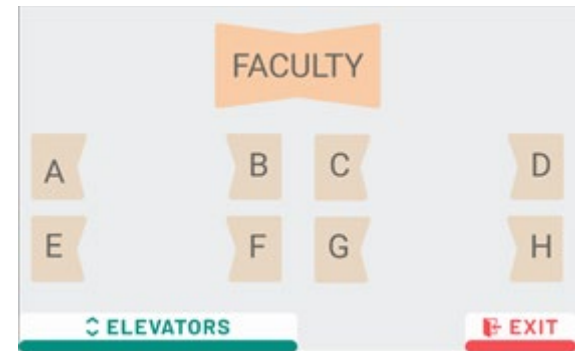
- 12:30pm : Welcome and course overview (joint for ME4182 and Interdisciplinary Capstone Design) on: <https://bluejeans.com/778055902>
- 12:40pm: Pitches by sponsors (2 minute per project)
- 1:25pm: Switch over to <http://capstoneone.gatherly.io/> platform
- 1:30pm: Designated floors for students to mingle with other students and sponsors. Booths setup on each floor for project presenters
  - Lobby: Welcome area and help desk
  - Floor 1: Industry projects cluster 1 (ME only projects)
  - Floor 2: Industry projects cluster 2 (ME or Interdisciplinary projects)
  - Floor 3: Student self-proposed Idea and meet with faculty
  - Floor 4: Entrepreneurial (Create-X) projects' floor
- 2:25pm: Adjourn

Floor layout on Gatherly  
for 17<sup>th</sup> August Session



# Plan for Day 2: Lab on 19<sup>th</sup> August

- 12:30pm: Continuation of course overview (joint for ME4182 and Interdisciplinary Capstone Design) on: <https://bluejeans.com/778055902>
- 1:25pm: Switch over to <https://capstonetwo.gatherly.io/> platform with designated floors for students to mingle with respective sections. Booth setup on each floor to designate location for faculty and 8 “desks” for teams to mingle and discuss among themselves
  - Lobby: Welcome area and help desk
  - Floor 1: ME4182-A02
  - Floor 2: ME4182-A03
  - Floor 3: ME4182-A04
  - Floor 4: ME4182-A05
  - Floor 5: ME4182-A06
  - Floor 6: ME4182-A07
  - Floor 7: Interdisciplinary (Industry/own idea)
  - Floor 8: Interdisciplinary (Create-X)
  - Floor 9: ECE4873-D1A
- 1:30pm: Section instructors introduce themselves and “stay” at their desk
  - Students check [capstone.gatech.edu/marketplace](https://capstone.gatech.edu/marketplace), find them on gatherly, walk and meet
  - Formed teams take a desk location and discuss to form their bids
- 2:30pm: Instructors walk around the room at the “desk” locations to check if the teams are formed and discuss project topics
- 3:00pm: Students confirm their teams on [capstone.gatech.edu/marketplace](https://capstone.gatech.edu/marketplace)
- 3:15pm: Adjourn



Floor layout on Gatherly for 19<sup>th</sup> August Session

# Important Dates for Students

- Pre-semester activities:
  - Submit start-of-semester survey on CANVAS
  - Create profile on [projects.gatech.edu](https://projects.gatech.edu) and enter skills/experience
  - Soft deadline to propose your own idea for premium pitch opportunity on [capstone.gatech.edu/marketplace](https://capstone.gatech.edu/marketplace)
- 17th August (Project Overview Day)
  - Learn about Industry Sponsored Projects
  - Propose your own idea, if any
- 19th August (Team Finalization Day)
  - 12:30pm: Course Overview
  - 3pm: **DEADLINE** to form Groups on [capstone.gatech.edu/marketplace](https://capstone.gatech.edu/marketplace)
- 21st August
  - 11:59pm: **DEADLINE** to submit your own project idea on [capstone.gatech.edu/marketplace](https://capstone.gatech.edu/marketplace)
- 22nd August at 8pm:
  - **DEADLINE** to submit bids for sponsored projects on [capstone.gatech.edu/marketplace](https://capstone.gatech.edu/marketplace) (*you will be required to work on ANY project that your team bids on if it is assigned*)
- 24th August:
  - 12:00noon: Groups assigned to industry projects and to sections
  - 12:30pm: Scheduled Studio on Bluejeans.com
- 26th August:
  - 12:30pm: Scheduled Lab meeting with your assigned section to present your problem statement

# Other References/questions

1. How does gatherly.io work?
  - You can access through computer or laptop only (no mobile devices) with Google Chrome installed. Webcam is required.
  - We used it for the Summer Expo! See video [here](#)
  - **PLEASE TEST** if your computer is compatible here:  
<https://test.gatherly.io/>
2. We want to work on our own project, do we still have to bid?
  - **Yes**, you have to bid on any project that your team wants to work on. Although, the bid for your own proposed idea can be just a few words stating that the project was proposed by you/your team. More details on bid submission to follow during scheduled lab
3. Week #1 plan and milestones: Refer to [Flowchart](#)

# Final Reminders

- Complete the [Start-of-Semester Survey](#) before the start of classes.
- Attend the first Studio on Monday, 17th August starting at 12:30 pm at <https://bluejeans.com/778055902>
- Update your profile on <http://capstone.gatech.edu/marketplace>
  - Cannot login? Then send an email to [webmaster@capstone.gatech.edu](mailto:webmaster@capstone.gatech.edu)
- Test if your computer works well with Gatherly Platform (to be used for social mixer on 17th August and lab meeting on 19th August)
  - <https://test.gatherly.io/>
  - ONLY works on Google Chrome with a webcam on a computer or laptop (not on mobile devices)