

Multi-disciplinary Capstone
Design Info/Mixer Session
Through GT4823 and Special Problems

04/03/2018

GTMI Auditorium at 11:00am

Objective for today

- Learn about how to get course credit for participating on a capstone design team (two mechanisms)
 - GT4823 for Capstone students
 - Syllabus & Schedule
 - Deliverables, grading, etc.
 - How to form teams
 - How to pick a project
 - Special Problems Courses for Non-capstone students
- NOT necessarily form teams
- NOT necessarily identify a project
- Next steps:
 - Register for a class
 - School specific Capstone Design section of GT4823 if you are a senior in ME, BME, MSE or ECE
 - Special problems course, ME4903 if you are not any of the above
 - Check <http://projects.gatech.edu> for new projects or upload your idea

What is Capstone Design all about?

Teams apply a systematic design process to real multidisciplinary problems.

A team structure is used to design a solution that performs the functions established by a project description.

- Course Syllabus: <https://goo.gl/vecEfv>

Goals for Capstone Design

1. Invent/design something useful
2. Apply your analytical knowledge to design it
3. Build it, test it (physically & virtually)
4. Document everything (lab notebooks, reports, presentations)
5. Demonstrate it at the Design Expo
6. Give to sponsor for use or patent it and start company

CREATIVITY

ANALYTICAL SKILLS

HANDS-ON

**Georgia
Tech**



**Capstone
Design Expo**



**Tuesday April 24,
4:30pm, McCamish Pavilion**

Why GT4823?

- Cool “real-world” projects
- Greater chance of winning at the expo
- Employers are looking for cross-disciplinary collaborative skills

GT4823 Lectures

- **Different Schools have different lecture requirements**
 - GT4823 – ME and MSE has lectures on every T/Th from 3:00pm – 3:50pm
 - GT4823 – BME has lectures concurrent with the BMED 4602 lectures
 - GT4823 – ECE has lectures concurrent with the ECE4012 lectures
 - ME4182 – ECE for Junior and Senior ECE students have to attend ME4182 lectures
- **First common lecture and project pitch session on 21st August, 2018 at 3pm in Architecture (East) 123**

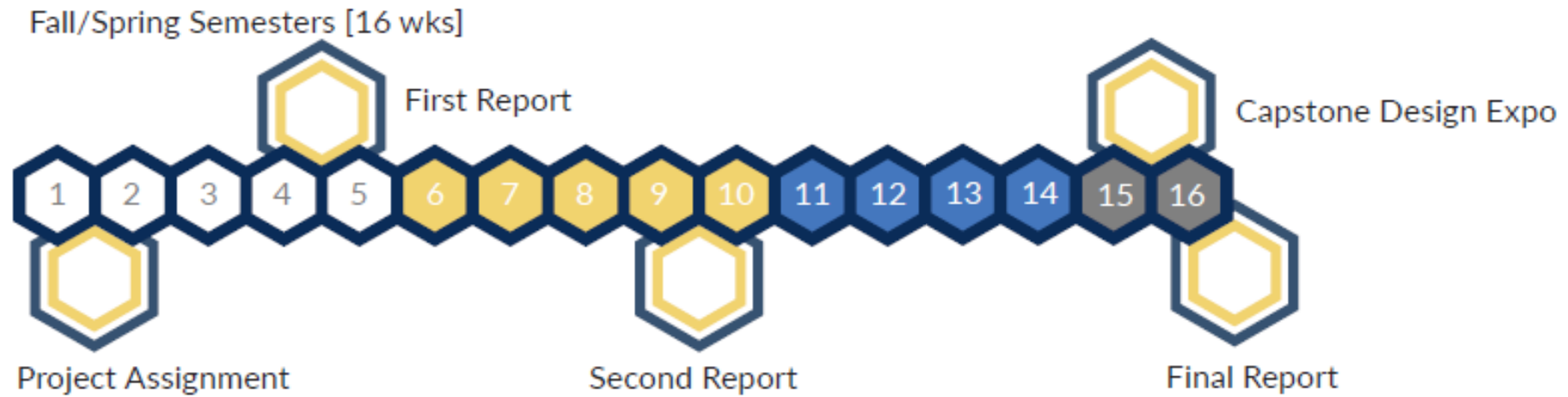
GT4823 Studio meetings

- Meet with your **primary** instructor at least once per week for 30 – 180 minutes during the scheduled studio times
- Studios are scheduled for meeting times with your instructor, team and for progress presentations.
- Coordinate with your primary instructor for weekly mentorship, presenting deliverables, grading etc.

Special Problems Course Credit

- A route for non-capstone students to participate in capstone design teams
- Identify a design project of interest
 - Projects.gatech.edu (final team decisions made end of first week of semester, see below First Week of Classes)
 - Student Mixers (mid-term, beginning of semester)
 - Social Contacts
- Each Design Project / Team has a faculty advisor
- Request permit for Special Problems Course credit from the faculty advisor for the design project
- Special Problems Course credit in the 'home' school for the project
 - 1 - 3 credit hours available depending on the project and individual student effort

Timeline



Choose a team
Choose a topic
Understand the problem
Market research
Patent study
Design concepts

Choose Design
Physical Mockup
Analyses
Calculations
Drawings

Design validation
Prototyping
Testing
CAD
FEA
Manufacturing

First Week of Class (Fall '18)

- 21st August – Sponsors pitch projects during first lecture
- 23rd August – Students form teams in studios (Team size of 4-6 students)
- 25th August – Teams submit bids for projects by 11:59pm
- 27th August – Projects are awarded to teams
- ...
- ...
- 4th December – Capstone Design Expo

How to form teams?

- Team sizes are 4 – 6 students per team
- At least one team member from outside of your school to qualify for a GT4823 team
- When?
 - Find team members today
OR
 - At the beginning of semester mixer immediately after the first GT4823 lecture
OR
 - Through projects.gatech.edu

Elements of a Good Capstone Design Project

1. Creative/Innovative - not just an assembly of off-the-shelf parts
2. Lends itself to analysis
3. Validate your design and learn from it
 - Prototype revisions
 - Design changes
4. Sufficient scope for senior design
5. Team must have the skills to complete the project or be prepared to learn them.

Projects types

- Industrial (big and small)
 - Teams bid for the projects on <http://projects.gatech.edu/>
- Faculty Research Lab
 - Teams bid for the projects on <http://projects.gatech.edu/>
- Your own crazy idea!
 - Submit your project on <http://projects.gatech.edu/>

Projects.gatech.edu (Demo)

- How to login?
- How to submit a project?
- How to form a team?
- How to bid for a project?

Group Activity for Today

- Pick 5 sentences that you do best
 - Share 2 of the above with your group
- Share one misconception about your major with your group

Takeaways/Reminders

1. Register for GT4823-<SCHOOL> or Special Problems through the projects 'home school'
2. **RSVP** to receive this presentation via email
 - <http://capstone.gatech.edu/rsvp/>
3. Check <http://projects.gatech.edu/>
 - Learn about projects and find team members with similar interests
 - Submit interesting multidisciplinary project ideas that you would like to pursue for Capstone/Senior Design
4. Attend the first GT4823 Tuesday's lecture, the projects' pitch session at 3:00pm in Architecture (East) 123 on 21st August, 2018
5. Visit the Expo on 24th April, 2018 at 4:30pm in McCamish Pavilion