

**EECS/BioE/ME C106A/206A**  
Final Project Presentation/Demo/Report Instructions  
Fall 2021

## Due Date Reminders

- **Presentations/Demos:** Thu 12/09 Fri 12/10, Cory 105, schedule below
- **Reports:** due Fri 12/17, 11:59p, submitted via Gradescope survey

## 1 Presentations/Demos

On the final presentation day (12/09-10), each group will give a two-part presentation of their final project, including *a)* a  $\sim 5$ min talk (with slides), *b)* a working demo, *c)*  $\sim 3$ min for questions. Because there are so many of you (48 groups!), we will be splitting you up into 6 blocks of 8 teams each. **Each team will be granted a 13min slot, 10 minutes of which will be for presentation and demo, 3 minutes for questions, and all team members will be expected to remain as audience members for the other teams in their block.** The overall schedule is as follows:

### Thursday

8-9a	<i>Breakfast</i>
9-11:30a	BLOCK 1
11:30-12:30p	<i>Lunch</i>
12:30p-3p	BLOCK 2
1:15-2:00p	<i>Coffee/Snack Break</i>
3:30p-6p	BLOCK 3

### Friday

8-9a	<i>Breakfast</i>
9-11:30a	BLOCK 4
11:30-12:30p	<i>Lunch</i>
12:30p-3p	BLOCK 5
1:15-2:00p	<i>Coffee/Snack Break</i>
3:30p-6p	BLOCK 6

Presentation block scheduling and food request forms have been posted on Piazza. **Between the slide deck talk and the demo, all team members are expected to have a speaking role in the presentation.**

Specific expectations for each presentation element are described below.

### 1.1 Slide Deck Presentation

Your presentation should give a brief overview of:

- the original goals for the project;
- what your project does (ideally, illustrated with system design and operation diagrams);
- difficulties you encountered; and
- improvements/extensions you would make if you had more time. (And you do have more time between Showcase and final report submission!)

Remember: we are looking for design, implementation, scope, and rigor!

To avoid spending time on laptop/projector troubleshooting, we'll ask you to send us the presentation slides by 11:59p on 12/08 so we can collect them all on one computer. The submission form will be posted on Piazza. You are welcome to send us a Google Slides link and update your slides past the submission time.

## 1.2 Demo

The second part of your presentation will be a (working!) demo of your system. While it does not need to be completely polished or finalized, you should demonstrate the basic idea of your project on your real hardware and show that it is functional. You may also include a short video if it enhances your presentation (e.g., a sped-up video showing the completion of a usually slow task or a video instead of a live demo for safety concerns).

If you're using any other hardware, you'll need to bring it to the demo along with any equipment necessary to make it work (e.g., power adapters). While we'll do our best to order presentations such that teams have adequate time to set up (e.g., not scheduling two projects using the same robot back-to-back), **you shouldn't plan on having much more than the 10min slot of the presentation before yours to get everything ready to go** and should design your system accordingly. By the same token, **make sure any changes you make to the setup of lab equipment will be easy to undo** to allow the next team using the hardware a clean slate.

## 2 Report (website & video)

Your final reports will take the form of a **website**, the address of which should be submitted to the Gradescope assignment by 12/17 at 11:59p (information forthcoming). Your website should show off all aspects of your project, and it should be something you're proud of and can show off during job interviews. Your website should also link to your **video(s)**, in which you should describe the purpose of your project and show your project in action. You may have one single video or multiple videos; it's up to you.

You may use any platform you like to host the website; Google Sites, Wordpress, Wix, and Weebly are easy options if you don't have another preference. Many teams have also had success with GitHub Pages. You may host videos on Youtube or any other service.

We understand that you can make a lot of progress between Showcase and the time you submit your final report! We want to encourage you to polish your project to the best of your ability, so we will take into account major changes when we grade your final report.

Your website should include the following sections:

### 1. Introduction

- (a) Describe the end goal of your project.
- (b) Why is this an interesting project? What interesting problems do you need to solve to make your solution work?
- (c) In what real-world robotics applications could the work from your project be useful?

### 2. Design

- (a) What design criteria must your project meet? What is the desired functionality?
- (b) Describe the design you chose.
- (c) What design choices did you make when you formulated your design? What trade-offs did you have to make?
- (d) How do these design choices impact how well the project meets design criteria that would be encountered in a real engineering application, such as robustness, durability, and efficiency?

### 3. Implementation

- (a) Describe any hardware you used or built. Illustrate with pictures and diagrams.
- (b) What parts did you use to build your solution?
- (c) Describe any software you wrote in detail. Illustrate with diagrams, flow charts, and/or other appropriate visuals. This includes launch files, URDFs, etc.

(d) How does your complete system work? Describe each step.

#### 4. Results

- (a) How well did your project work? What tasks did it perform?
- (b) Illustrate with pictures and **at least one** video.

#### 5. Conclusion

- (a) Discuss your results. How well did your finished solution meet your design criteria?
- (b) Did you encounter any particular difficulties?
- (c) Does your solution have any flaws or hacks? What improvements would you make if you had additional time?

#### 6. Team

- (a) Include names and short bios of each member of your project group.
- (b) Describe the major contributions of each team member.

#### 7. Additional materials

- (a) code, URDFs, and launch files you wrote
- (b) CAD models for any hardware you designed
- (c) data sheets for components used in your system
- (d) any additional videos, images, or data from your finished solution
- (e) links to other public sites (e.g., GitHub), if that is where your files are stored

## Tips for a Successful Project

- Make your system as modular as possible. Work toward a minimal functional system first, then augment different modules as time permits.
- Tackle limiting steps (e.g., hardware construction) first.
- **Talk to us beforehand if you fear you will miss a deadline** — in general, late project deliverables will not be accepted. We understand that life happens, but you must reach out to us before the deadline is missed.
- Use **version control**! Maintain a code repository in [GitHub](#), [Bitbucket](#), or your favorite alternative.
- Take lots of pictures and videos at every stage of your project, and keep other records of your progress.
- **Post your technical questions to Piazza**, and better yet, help answer your classmates' questions! You're likely to be solving some of the same problems, and they might be problems the course staff has never seen before.
- If you're tired of project emails clogging your inbox, try making a team [Slack](#).