



O²P – Open Option Projects

ECE395-B / ECE495-B Spring 2020

Class requirements:

- **Attend required class meetings:**
 - o 1/22 – OOP requirements and project sign-up
 - o 1/29 – confirmation of projects and workshop sign-up – stop by Olivera’s office throughout the day
 - o 3/11 – mid-semester meeting
 - o The week of 4/20 (signup will be distributed later) – Closing meeting with O. Notaros and course evaluation
- **Participate in Project demos:** 4/15 (**Wednesday**) 9-11 and/or 12-2 pm in the BC Infill
- **Submit required documents:**
 - o 2/5, midnight: Project Proposal (email, 2 pages), approved by an EiR (any)
 - o 3/11, midnight: Mid-project Report (email, 3-4 pages), discussed with team’s EiR mentor
 - o 4/17, midnight: Project report (emailed), discussed with team’s EiR mentor
- **Meet with mentoring EiR** volunteer at least two times during the course of semester (1 + 2)
- **Attend 2 workshops per semester** (one Arduino/RaspberryPi and one for B111 Lab Equipment)
- **Maintain Project Notebook** (can re-use in the future)

Project notebook:

Every student should purchase a notebook and use it while working on the project to take notes, tape important papers inside, write during meetings and similar. Notebook can be used over multiple semesters, especially if a student continues work on the same project.

EiR mentors:

Each team will propose an EiR mentor that they believe would be the best to guide them over the course of their project work (see explanation for the project proposal). EiR mentor assignments will be confirmed after we receive proposals from everyone.

Beside initial meeting with any EiR that is available in the Lab, each team will be required to meet with EiR mentor at least two times per semester: **once before 3/11**, and **once in April**. Meeting and evaluation form will be emailed to the students. Scans of two meeting forms should be included in the final report (see final report requirements).

- ❖ EiR commences during 2nd week of classes (Tue, Wed, Thu); binder on the EiR desk (on-site and on-call members)
- ❖ Schedule and expertise on EiR website: <https://www.csueir.com/>
- ❖ Contact info will be emailed to the students

Due documents:

All due documents are team deliverables and should be emailed to olivera@colostate.edu either as pdf (preferred) or word files.

Formatting: font size 11 or 12, Times New Roman or similar, single spacing, 1" margins on all sides, justified (straight edges on both left and right sides).

Please name files as requested below.

is number of your project – this info will be shared with everyone by the end of next week, as some people are still looking for projects.

Project Proposal: [OOP proposal.pdf or OOP proposal.docx]

First page (cover page) should contain the following info: project title, team members' names, any mentors/collaborators/helpers that are not in OOP, and up to a 200-word project summary. On the second page, include source of your project idea, rough explanation of what and how you are going to do it and project plan table showing estimated phases and delivery/finish date. Team may divide deliverables into different levels: Musts vs. Wants vs. Would be Nice.

If project idea is such that team envisions working on it over a few semesters, state it in the summary. Summary is not binding; project scope may be changed during the semester.

At the bottom of the second page add a statement "We believe that **** EiR volunteer will be an appropriate mentor for our project". The list of volunteers is displayed in B111 Lab window and available on the web at <https://www.csueir.com/>

Mid-Project Report: [OOP# midreport.pdf or OOP# midreport.docx]

Mid-project report should be 3-4 pages long.

First page (cover page) should be re-used from the project proposal document. If needed, changes may be made to the project summary from previous submission.

Starting on the second page, team should provide update on any research that has been performed, any options that have been considered and design choices made; software that will be used should be listed. Team should explain if any components have been ordered, and what has arrived. This document should include some preliminary graphs, charts or sketches of the design. Updated project plan table should be included.

A reader of this document should be able to tell exactly what and how much has been done so far.

Final Report: [OOP# report.pdf or OOP# report.docx]

Preliminary version of the written report should be displayed on the table during demos on 4/15.

Final report should be 4-8 pages long.

First page (cover page) should be re-used from the mid-report. If needed, changes may be made to the project summary from previous submission, to reflect final project description. Front cover should be nice and "catchy" – it may include a photo of the final design.

Report should include project background (reasons for choosing the project, source of the project idea and changes made), explanation of performed testing and results, and conclusion. It should include any relevant formulas, graphs, charts, measurements or simulation results and photographs (this is an engineering document - make it "as engineering as it can be"!).

A team should state what was learned in the process and what they would do differently, if they were to start "all over again".

If any team member has previously worked on the project, include brief overview of what was done in the past. If anyone is planning to continue working on the project in the future, provide plans for future work.

Team should take pictures as they work on the project and include them in the report.

A report should be clear and concise for general engineering audience.

All tables, pictures, graphs, charts and/or diagrams should be numbered and captions to figures should be used.

Literature used, references and/or bibliography should be listed at the end of the report. Students should learn the difference between reference and bibliography and use IEEE citation reference (formatting style that is standard for all engineering papers).

Section titles should be typed using slightly larger font.

Your report must be clear and concise for general engineering audience.

Required Appendix A: Literature and Relevant Academic Courses – This should be a one to two pages appendix, which is not traditional for engineering papers, but is needed to justify your participation in OOP. In this appendix, team should state how were listed literature and bibliography used (and to what extent were they useful)

and have they used any knowledge from any of the academic courses (e.g. we have used *** *Law* that we have learned in *ECE****; we have used *** *transform* that we have learned in *ECE****, we have used *** *test equipment* which was used in *ECE**** ; the knowledge of *** that we have *learned/studied/discussed in PHYS**** has helped us a lot with *** *part of our project*, or similar)

Required Appendix B: Two meeting forms acknowledging meeting with EIRs must be included at the end of the report. Teams missing this form will automatically receive U=unsatisfactory grade for OOP. Although we encourage you to meet with EIRs as many times as you wish during the semester, please include only two forms.

Project presentations:

Product should be working on the day of the presentation. If product fails to work, a team should clearly state what went wrong and try to explain reason(s) for its malfunction.

Product does not have to be soldered, although some teams might choose to do so. It must be safe to operate on campus and not cause damage or injury to anything or anyone.

Teams should bring the preliminary version of the final report to project presentations to show to the visitors.

Each team member should have their project notebook on the desk during presentations.

Workshops:

List of workshops with exact dates will be provided in an email or during second class-time.

		Basic Arduino Workshop	
		Advanced Arduino workshop (topics)	
		RaspbPi	
		Soldering techniques	
		3D printers	
		CNC machines / PCB prototyping	
		IR pre-heater, reflow-oven, laser cutter	

Break your deliverables into levels:



MUSTS...
(CONFIDENT) / for sure...



WANTS...
maybe...



WOULD BE NICE...
(HOPEFUL) / ambitious...