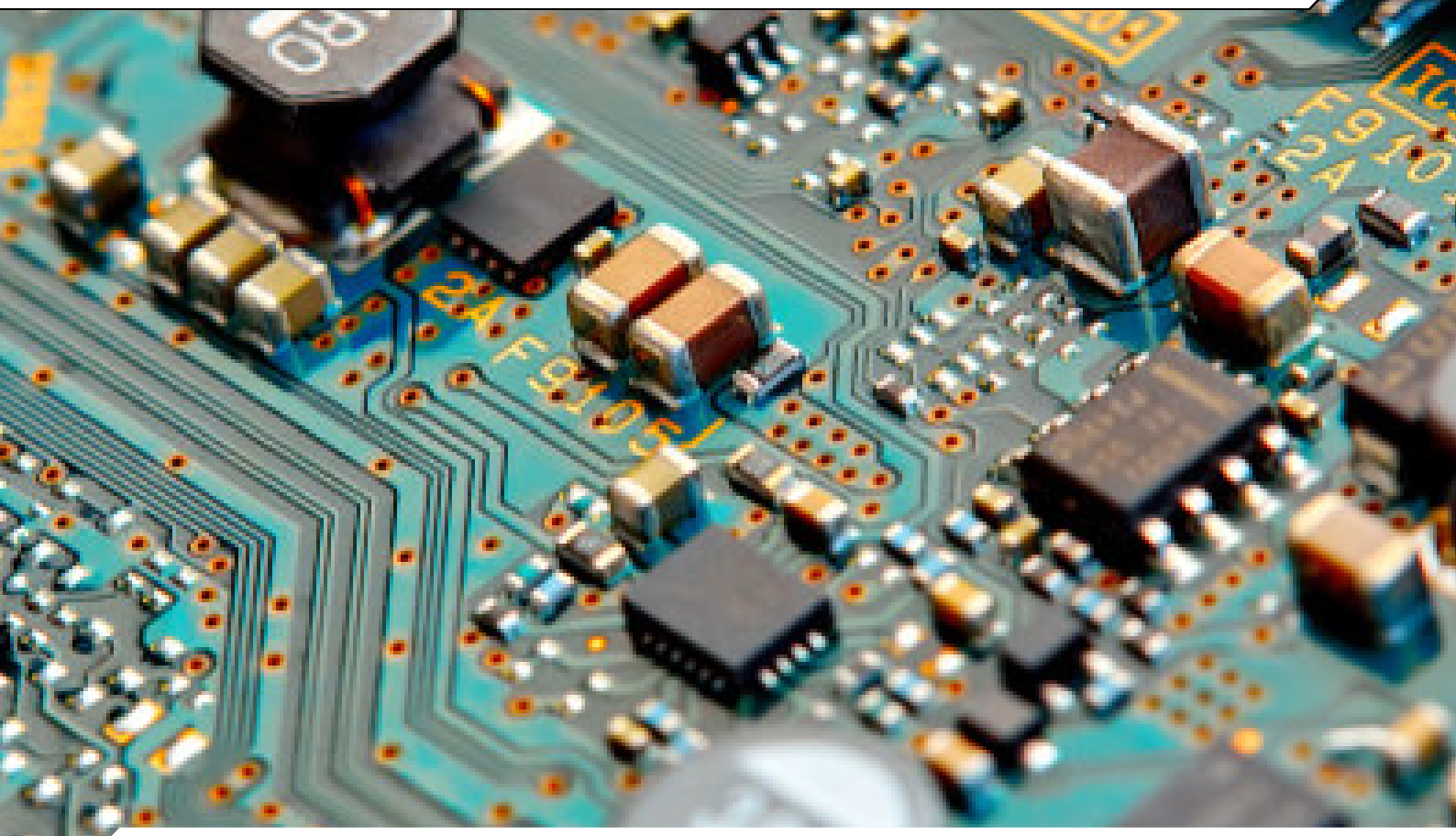
IEEE Quarterly Projects
Fall 2019 Entry Packet



Congrats on being accepted to IEEE Quarterly Projects! Now what's next?

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Introduction

Welcome to Quarterly Projects: Fall 2019!

In this document, you will find everything you need to know about competing – project specifications, expectations, guides to getting started, and the how the whole process works.

What is Quarterly Projects?

Quarterly Projects (QP) are entry-level projects designed to get students to start building. We (IEEE at UCSD) don't expect experience or expertise – instead, we look for people motivated to create. Each quarter, we develop a challenge that will teach competitors fundamental skills in computer and electrical engineering – such as (but certainly not limited to!) Arduino, Raspberry Pi, web design, prototyping, and building mobile apps – which leave participants with the tools and knowledge necessary for designing their own projects.

While we aim to teach, this isn't a class. We provide the challenge, materials, some starter guides and workshops, and we (the Quarterly Projects chairs) and the Mentors will be available for support and advice. The product is up to you. We expect you to use resources available through campus and IEEE to learn by doing, and apply your creativity to jump off and above the specifications we set for the competition during the showcase at the end of the quarter. The best projects can win prizes and get connected with our sponsors for further opportunities!

Why Participate?

Projects take time, and college students have no excess of that. So why compete in Quarterly Projects?

Project Experience

Even the best students can't sit down and physically build something their first time. Inventing is a whole realm of skills separate from academics, and is equally necessary for becoming an engineer – arguably more necessary, since there are countless Jeffersonian engineers who self-taught and wrote those great Instructables that we students follow. Building experience creates engineers, and QP gently introduces beginners to the world of building. You can list projects like these on resumes, LinkedIn, and your project portfolio

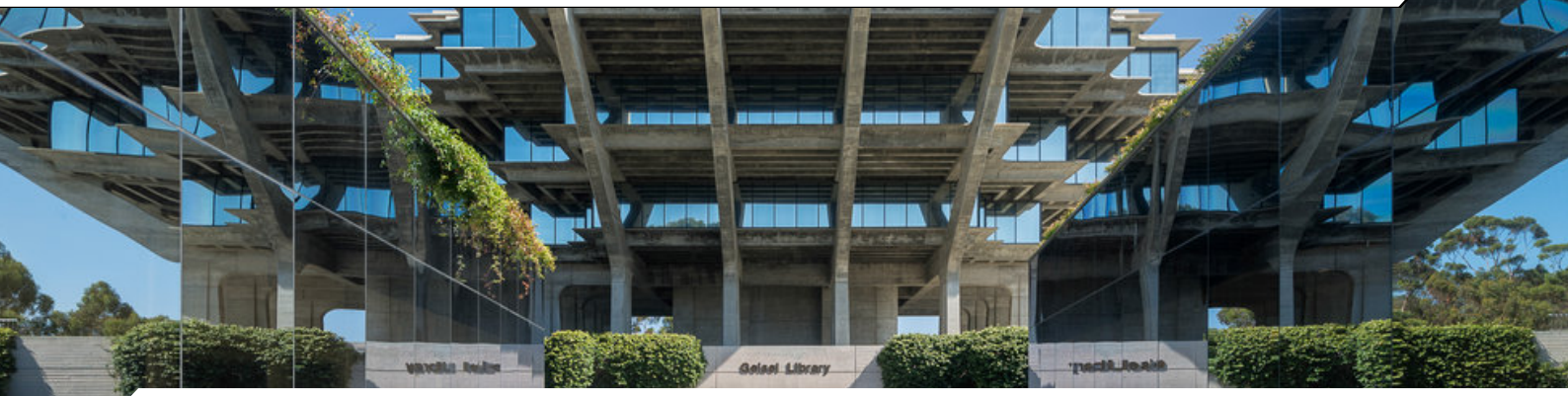
Preferential selection for annual projects

Our branch hosts four annual competitions – Grand PrIEEE, Micromouse, Project Drive, and RoboCup. While we want to support as many students as possible, we don't have the resources to fund enough teams for every student who applies, making placement highly competitive. Participating in QP shows us that you possess the kind of character we want on our teams, and helps you develop skills that we look for in annual team members. We record all participants and keep an eye out for you on annual applications – it's not an assurance that you'll be selected, but it provides a "leg up." On the other hand, should you not complete your project, it may make us inclined to double think accepting your application.

The Challenge: School Life

The Theme

We're all swamped with coursework and extracurricular activities; how do we have the patience to deal with school problems? There's a lot for individual students to handle, and surely technology has a solution. Make something that students (like you!) would want to use to make school life better!



Just a few project areas to get some ideas from or use:

1. Study Buddy

Make an app or tool to help you stay concentrated on coursework or streamline the process of studying.

2. Daily Basis

Students are always busy getting around on campus in every possible direction: to class, from class, off campus. What could help students make their daily routine more efficient or more rewarding?

3. At Your Service

There are lots of useful resources on campus available to students, but few actually take full advantage of them. How can we raise awareness or advertise these resources to students?

4. School's Out

School life isn't all about working; we all need to take a break and have some fun! How could engineering enable entertainment and relaxation?

Timeline

Week	Events and Deadlines
1	IEEE Fall GBM
2	Kickoff
3	Project Proposals Due + First Workathon/Workshop
4	
5	Milestone 1 - Second Workathon/Workshop
6	
7	Milestone 2 - Third Workathon/Workshop
8	
9	Showcase + Final Workathon
10	Go study!

These times are subject to change. Use this to gauge your progress, and ensure that you have enough time to make a great project.

Proposing Your Project

Proposing your project will be the first stage of your journey in QP. Planning your project is one way to ensure that This proposal will include 4 parts:

1. Project Description

This is a general description of your project. You can describe what it does, what you will use, and maybe even some drawings in assisting those reading your proposal. This should be 3-5 sentences.

2. Bill of Materials (BOM)

This is a chart including all of the parts you are going to buy, the link to buy the parts, the quantity, and the total price of the parts, including shipping and tax. This is what the QP staff will use to buy your parts so make sure to have this in order.

3. Milestones

In your proposal you will set up your two milestones of major progress that you want to complete in order to arrive at creating your project that is described by the project description.

Have your first milestone as completing the setup of your project and hopefully have a good amount of progress done, while your second milestone should be a lot closer to your finished project. And of course, you should have your full project completed by the Showcase, and maybe even add more!
For these milestones you will have milestone meetings with your mentors to let them know your progress and also have some deadlines that could help you keep better track of your progress.

These meetings will be at the 2 workathons of your choosing, your mentors will contact you about making these milestone meetings in the weeks before. Try to have your milestones completed by your meetings!

4. Confidence

The easiest part of the proposal should be the confidence section. Just collect a sentence from each team member stating why you are confident you will succeed in making this project and put it at the end of your proposal!

And remember, you can always change aspects of your project barring issues of budget or time, just ask the chairs or your mentor!

Ordering Parts and Materials

One major part of the project proposal process ordering your parts and materials. **Before you buy any parts, make sure to check the QP Parts stock** to save your team and QP some money. **You have a 50 dollar budget.**

Approved Vendors

This list is ordered in terms of the vendors you should use i.e. if your part is not available on amazon go to spark fun, etc.

1. **Amazon (Make sure your part has amazon prime)**
2. **Sparkfun**
3. **Adafruit**
4. **Digikey**

If your parts are not from these 4 sites, we cannot order them, as shipping times may be unpredictable and it is honestly a pain ordering from so many sites.

Just a reminder that Shipping Cost and Tax is included in your budget, so make sure to either order with Amazon Prime or account for this when finding parts.

Your team does have the option to go over budget if necessary, you just have to buy the parts that put you over budget yourself, so make sure not to order more than what you need just in case you need to re-order parts.

Parts Stock

You may be thinking, “wow, 50 dollars isn’t enough, I can barely buy an Arduino with that price!” Well, think again because we have a butt-load of sensors, micro controllers, and other parts available to you that you don’t have to include in your budget. This allows you to have those 50 dollars for other sensors or parts.

We have set of drawers that you can take parts from. The drawers include parts such as sensors, motors, and cables. This box will sit outside during workathons so you can get whatever sensors and parts that you need.

We also have a set of drawers that includes all of our expensive parts, including Arduinos and Raspberry Pi’s. **Ask us if you need any of these parts, as this box will be locked up.**

Project Guidelines

These project guidelines aim to not only give you what you need to make a project that can win the competition at the end of quarter showcase and what the judges will subsequently judge you on, but also give you a guideline for completing projects in the future.

1. Prompt Fulfillment

Does the project assess the problem given and provide a solution to the problem?

Make sure your project is relevant to the theme, ask if you are unsure.

2. Polish

Does the project look like it is complete and made with care, or does it look rushed and poorly planned?

Finish your project early and put a lot of work into it to ensure that your project looks great for the showcase.

3. Impressiveness

Does the project make you say “wow”? Did the team overcome an extra obstacle to complete their project?

Take a chance on your project, try something that you haven’t done before and experiment to make something that you are proud of.

4. Presentation

Was everyone involved in the presentation? How much work did they put into the presentation, does it look well practiced and professional? Did the team make sure that the project would be presentable?

Ensure that your project is ready for the presentation, wear business casual if possible, and make sure to rehearse your presentation or slideshow.

4. Documentation

Is the documentation thorough and complete? Is the documentation ready to be sent to Quarterly Project affiliates or is prepared poorly?

Resources

Slack

Slack is the main method of communication that you should use to message us and the mentors, but to also communicate with your teammates to coordinate time to work on projects. You can ask for help directly to us, your teammates, or make a message in the general channel to get help from others in QP.

IEEE Project Space

PS is IEEE's workspace, located in EBU1 4710. You can store materials here, work on your project, and use the soldering stations. It is only available when officers are in the room, so make sure to arrange to meet with us during the hours marked specifically to QP.

QP Hours are currently yet to be determined. But here's the gist anyway: Here you should find us and other QP mentors to help you on your project, or if you just want someone to hang out with. You can also come any time, but your chances of finding a member of QP staff might be hard.

Events

Kickoff

You are probably here right now! The kickoff is the event that we use to start it all. Here you will meet your team and find out what quarterly projects is all about. Also you will learn the logistics of the project, meet your teammates, brainstorm your project, get materials, and play with your new Arduino or Raspberry Pi.

Workathons

At the workathon, you can come and get materials, work on your project with your group, or even get some help from us and some staff members in IEEE. You can also use some of the equipment at project space such as soldering irons for your projects. These events will have refreshments, so make sure to come and get productive work on your project! Your team must come to the second workathon or make an appointment to receive feedback for your project and ensure that you are on track to finish. **You are required to come to at least two workathons for the milestone meetings.**

Showcase

At the showcase, each team will set up their project and have 10 minutes to talk about it. You are not required to use the full ten minutes, but be prepared to talk about: What it is and why you chose it, challenges and victories while developing, and how each person contributed. Also, for the showcase, your team is required to fill out documentation explaining the stages of your progress. You must email me documentation for your team before the showcase. We will invite guests to judge your projects, and then. We often have notable people such as the department chair at these events, so it's important to come and network and even win the competition and some prizes. **This event is mandatory.**