CSE 611 Project Team Guidelines

If you are thinking about taking 611 (or have already signed up!) and you want to know a bit more about the course, how it works, what the roles and expectations are, and how you can succeed - this document is for you.

# How does the course work?

The course revolves entirely around the execution of a single project, implemented in a way that simulates the way a project would run in industry. This means that there will be very few lectures, and the course will run as a series of one on one meetings between the project teams and the instructors and sponsors. The projects will require formal documentation, need to produce testable results in a production environment, and will include some type of final presentation and handoff of work. More information can be found in [the syllabus](https://drive.google.com/open?id=1uNr-tdui777J-eGD065jcl2EuJSCEy_jaOGBAQ1dZ9U).

# What makes a good CSE 611 Project?

There is no one answer to that question (there have been great projects that were very different) but there are some general guidelines.

## Research vs. Application

Generally speaking, application development projects work best with this course. You can do research projects as well, but if you do, they need to include some sort of measurable deliverable.

## Depth Requirement

In order for the course to count as part of the depth requirement for your area, the project needs to be in that area as well; a mobile app would not count for hardware, and a robot would not count for software and systems (unless, of course, what you are doing is programming the robot rather than building it).

## Team background and experience

While we want you to learn something new as part of this course, you should temper how much new material you want to take on with the fact that you need to produce a working project at the end. This is a bad time to sign up to build a robot if you have never taken a robotics class, or to take on a ML problem if you haven’t taken machine learning. Using a new framework for mobile or web development is probably fine (although it can be more work than it seems!) but learning a new language at the same time as you are trying to build a working project with it is probably not.

## Proposed vs. Sponsored

There are many projects available for the course that have external sponsors, either from local industry, non-profits, campus startups, or faculty in CSE or other departments. While you can also propose your own project, you will get a more complete experience working with an external sponsor. If you want to propose a project, there are conditions and limits to what can be proposed (more on that below).

# How are teams formed?

The teams are self selected (you pick your teammates!) It’s a good idea to make sure that you feel comfortable working with your teammates, since there will be a lot to do during the semester, and you will be depending on each other to succeed. The team sizes can range from 2 to 6 students, based on the project size and complexity. Solo projects do not work as well in this course, and while there may be circumstances under which a solo project is possible, you will need to discuss that with the instructor.

# Where do the projects come from?

The list of project suggestions can be [found here](https://invenst.cse.buffalo.edu/viewideabank.php). There are a wide variety of projects, covering many different areas of computer science. They have been suggested by a variety of different groups, from industry to community groups to academia. These are short previews that are intended to give you the gist of the project without going into great detail - if you want to know more, you can ask your instructor. If you select a project for the course, there will be a requirements gathering process that will give you MUCH more information before you start coding. There may also be some last minute entries that are not on the website; the instructor will make you aware of any special opportunities.

# Can I propose my own project?

If there is nothing in the project database that strikes your fancy (or meets the particular depth requirement you have), or you are very passionate about a particular project that is not on the list, you can propose your own project. Naturally, there are some limitations as to what qualifies. Students who wish to propose their own projects should ideally contact the instructor before the start of class, so that in the event what you would like to propose is not accepted, you can either revise your proposal or select one of the pre approved projects.

## Pre-existing work

Obviously, you can’t use a project that you have already built for the class, UNLESS what you are proposing is a set of enhancements to that existing work. If so, they will need to be of sufficient scope and complexity to count (see hello world below); this will need to be looked at carefully.

## Double dipping

You can’t use any project that you are also doing for another class/independent study/research. You can’t use any project that you are doing for work/internship/pay. As mentioned, you **can** continue work on a project that you started in a previous course or independent study.

## Hello World

Assuming you do well, this counts as your master’s project. Don’t propose an app that creates a contact list, I know that you can download that from an android tutorial. **The expectation is that each team member should be able to devote 10 hours a week to this project**; it should be scoped appropriately. It’s best if your proposed idea is solving a real world problem that you have. Conversely, it’s important to remember that the semester goes by pretty fast - don’t try to create a new operating system, a new programming language that runs on it, and a new browser in that language just to produce a web app!

# Who “owns” the project at the end?

Some (if not all) of the projects in the database are sponsored by local industry, entrepreneurs, non-profits, etc. In these cases, they own the results of the project (and there will be a brief contract to sign to that effect). You’re helping them out while at the same time gaining valuable experience working on a real-world problem. What you get out of it is a more interesting project that you can put on your resume and talk about in an interview. You will also make connections that may be willing to provide references or connections as you look for work. What they get out of it is a job that they (often) could not afford to do otherwise, and/or a connection to students that they may be interested in hiring later on! If you propose your own project, then the project team owns it - if you want to go on and form a company around your project, that’s fantastic!

# What are my responsibilities as a CSE 611 student?

As this course is a bit different than many other classes in the way that it is run (especially if the project has an external sponsor) there are some expectations that are different as well.

## You are an ambassador

If you are working on a project for an external sponsor, keep in mind that you represent the department and the university to that person. If you are professional, helpful, and produce great results, they will remember that, and it will help strengthen UB CSE’s role in the wider community (and make your degree more valuable). If you are late, rude, unprepared, or don’t do what you say you will, that will have the opposite effect.

## Meetings are not optional

The course uses a one on one meeting format. These meetings are critical to your success in the class, and it is important that you show up, on time, for all of them. Life is busy, plan for it. Remember, if you’re early, you’re on time. If you’re on time, you’re late.

If, for some reason, you cannot make a regularly scheduled meeting, it is your responsibility to let the instructor or sponsor know this **ahead of time**, and to reschedule appropriately. Ahead of time does not mean 10 minutes before the meeting, it means at least a day before. Always apologize if you need to move a meeting, that’s basic professional courtesy.

If there are multiple members on the project team, not every one of you needs to be at every meeting, as long as those who are attending are up to speed. It’s one of the benefits of working with a team!

## Be prepared

When you come to a meeting, it is your responsibility to be prepared. This means making sure that your project schedule and documentation is current, having a concise status update, and if you are experiencing issues, a clear formulation of what those issues are, what you are doing to resolve them, and where you might like advice or assistance. You are taking other courses, you will have exams and other projects; it is your responsibility to manage your time so that you don’t show up empty handed, even if there are midterms/interviews/giant space aliens attacking campus.

## You are part of a team

Teamwork can be difficult! You may have disagreements with your teammates, personal and professional. You are all depending on each other to succeed, however, and learning how to work productively even when problems occur is a very important skill to have. If you are assigned a task on the schedule, do it! If you are having issues, keep your team informed! If you can’t make a meeting, make sure that your team is briefed on your progress and on any issues. There is nothing worse than surprising your teammates in a meeting with a sponsor or the instructor by saying you didn’t do your job. You are also not helping your teammates (or the project) by doing their work or covering for them over time. Everyone needs to be responsible for their fair share.

## Take pride in your work

If you are working on a project for a sponsor, your success or failure is also their success or failure. You have the opportunity to make a positive difference for them, while advancing your own skills and capabilities. If you are working on a self sponsored project, remember that you will be presenting it to your peers and professionals alike at the end of the semester. Make it something that you can be proud of.

# What happens if the project runs into trouble?

It almost certainly will. Planning for this is part of what you need to do in this course. Since the projects are real, and not designed explicitly to be problem free and achievable in a certain amount of time using resources that are guaranteed to be available, there is risk! Sponsors may change their minds! Approaches you thought would be easy may be hard (or impossible). Assumptions you made in design can turn out to be insufficient or incorrect. There will be the opportunity to course correct, work with sponsors to change things (within reason), and substitute approaches. This doesn’t mean that you can drop half your requirements because you procrastinate - you’ll need to justify your decisions, but the focus is on turning in a working project that comes as close to spec as possible, not fulfilling any specific requirement or approach.

# What happens at the end of the project?

There will be an opportunity (and requirement) to [present your project to your peers](https://odin.cse.buffalo.edu/demoday/), and most likely to a panel of judges in a demo. Your project MUST be deployed to a production environment, or have completed results, or a working prototype (depending on what sort of project it is). You will be responsible for turning over materials to the sponsor in a mutually agreed upon way, along with all documentation necessary for the care and feeding of your project once it is in their hands.