

CS450HO – Robotic Design & Fabrication Honors, Choate Rosemary Hall

Fall Term 2022

Instructor Information

Instructor	Email	Class Location	Home Location
Ms. Clark (she/her/hers)	dclark@choate.edu	Lanphier Center for Mathematics and Computer Science, Room 118	REDACTED

Course Description

Introduction to Robotics is a hands-on, project-based class to introduce students to concepts in robotics. During this course we will go over robotics engineering concepts and robotic fabrication using the FIRST Robotics Competition (FRC) as the learning mechanism.

Class Meeting Times

This class meets during **C Block**: Monday's 11:30AM-12:40PM, Wednesday's 9:20AM-10:30AM and Friday's 8:00AM-9:10AM.

Grade Breakdown

Grades in this course will be based on Engineering Notebook submissions, project work, classwork, participation, attitude, and teamwork skills. The Engineering Notebook and project work are described below.

This class will consist of one long-term design, fabrication and assembly project centered around the past FRC challenge from 2011, Logomotion.

This project will make up the bulk of your grade and will be completed in a small group. If you find you are having trouble with a team member equally contributing to the project, contact Ms. Clark to schedule a team conference to discuss the issues and find a resolution for all team members. Project management and conflict resolution are critical skills for high school, university, and the workplace. If for some reason the conference does not resolve the issue, your project grade can be individually impacted even if your team is successful in the project challenges.

You will be expected to keep an Engineering Notebook design log during each project. You may use a physical notebook or a digital notebook on your iPad or laptop. The following items are expected in the notebook:

- Complete an entry every time you work on the project. The last 15 minutes of each class will be dedicated to logging your work for that day. Entries will include written notes from research, sketches, calculations, and ideas/brainstorming lists.
- Every entry should be dated in the top left corner of the page.
- Include sources for research note entries.
- Annotate all sketches so an outside reader can understand what is being displayed.
- When completing any calculations, write out all equations used, define the variables and/or inputs and outputs, and include units.
- Create a title for any idea lists or brainstorming lists you write down so an outsider reader can understand what is being communicated.

Homework will be assigned weekly and will consist of completing reading and reflection questions from the NASA Robotics Alliance Project (RAP): Robotics Design Guide as well on Onshape CAD tutorials. Please see the HW schedule document for details and deadlines.

The grade breakdown is as follows:

- **Project Work:** 60%
- **Engineering Notebook/Homework:** 40%

Late Work Policy

If you are having difficulty completing an assignment on time, please come to me right away so we can talk about the issue and come to a resolution. I am a very understanding person and know that the pressure of boarding school classes can be daunting, but I cannot help you if you do not effectively communicate with me. Late work will be accepted under certain circumstances only if you communicate why the work is late to me. Deductions for late work will be decided on a case-by-case basis.

Ms. Clark's Classroom Rules

1. **Be kind to all.** Kindness is always #1, and we treat all our fellow students, teachers, school staff and ourselves with respect.
2. **Arrive as you are, and I will meet you there.** No matter where you are each day, and even if that changes every day, I will always meet you where you are, and we will go from there. This can refer to your emotional state, energy level, headspace, technical skillset, or anything else you are feeling. Never be afraid to arrive exactly as you are in this classroom.
3. **No questions are dumb questions!** Never feel afraid to ask a question if you don't understand something or need more information.

4. **We learn together.** Everyone brings a unique perspective to the table, and we all have something to learn from one another.
5. **Constructive feedback is always welcome.** If you want to see something change in the classroom, you are always welcome to come chat with me or send me an email. I can't promise all requested changes will be implemented, but I will do my best to come to make reasonable accommodations.
6. **Have fun!** Even when things get tough, I promise we will do our best to have fun along the way

Office Hours

I will have office hours during study hours on Tuesday's and Wednesday's (8:10PM-9:20PM) in Combination House or via Zoom. If you need to meet with me at a different time, please email me to set up a time.