

FRC 6328 CAD Training

Week 3: Part Design Intro

Course Outline

Week 1: Introduction to CAD and the training format

Week 2: Introduction to sketching

Week 3: Introduction to part design

Week 4: Effectively using Part Studios

Week 5: Assemblies and mate connectors in Onshape

Weeks 6-10: Using CAD to design for FRC and beyond

***We'll try to give opportunities for those who are more familiar with CAD to get ahead/do more advanced things in the first half of the training*

Week 2 Objectives

- Learn all about sketching
 - Different shape types
 - Construction geometry
 - Sketch constraints
 - **Why blue lines are bad**
 - How *Use* is so powerful
- Watch the Onshape videos to prepare for next week

Any questions from the week 2 materials? Slack us

Week 3 Objectives

- Learn about features for creating parts
 - **Extrude**
 - **Revolve**
 - Loft
 - Sweep
 - **Patterns**
- Complete learning pathway on multi part studios

Where to do your work

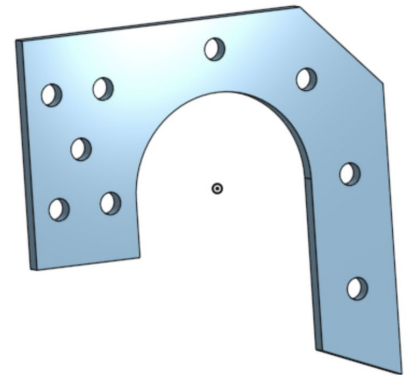
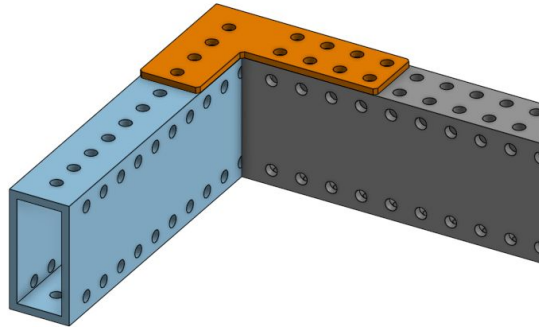
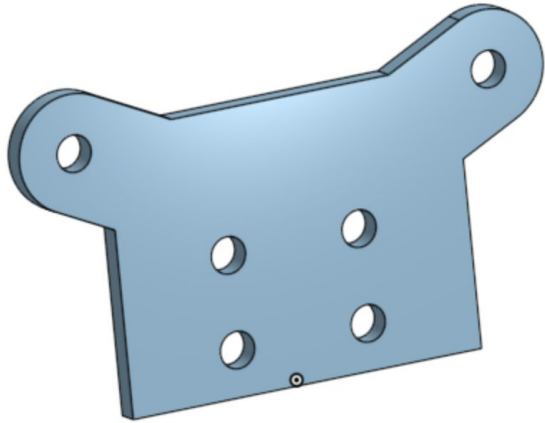
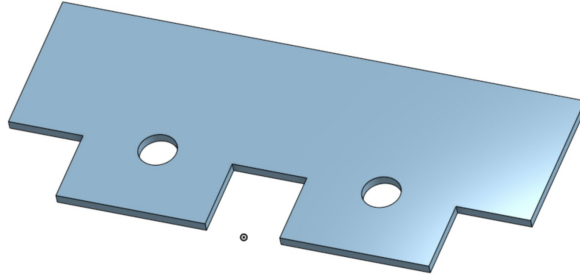
- **You will be doing all your work in the provided document in our Onshape team**
 - You must have filled out the form from last week so we can add you to the folder
 - Document can be found under
 - Teams -> FRC6328 -> CAD Training -> Submissions -> <<Your Name>>
- **Organize your files based on week by creating a new folder**
 - Can be created from plus button in bottom left of document
 - You can create multiple part studios in the weekly folder for the different exercises

What you need to do this week

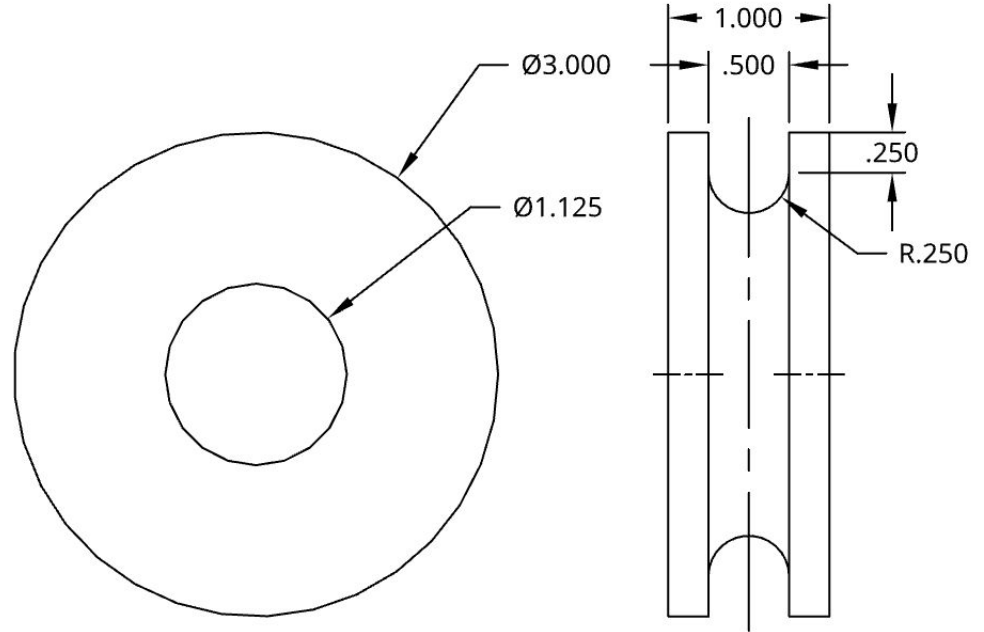
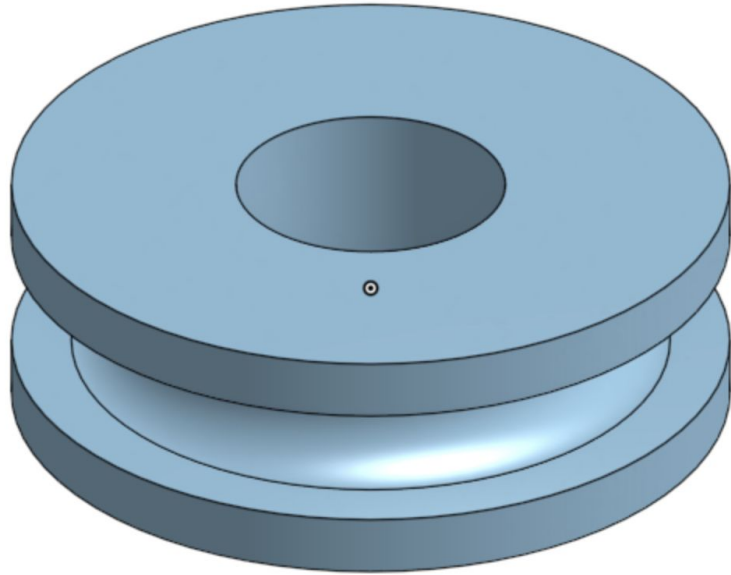
- Complete our sample parts based on the provided drawings
 - 1 - Extrude everything from last week
 - 2 - Revolve pulley for pollycord
 - 3 - Gusset using linear patterns
- **Complete Onshape Learning Pathway - Numbers 5 on multi part studios**
 - **Please also do these exercises in your folder**
- Submit your results in the HW submission form
 - <https://forms.gle/MCAW4b72f3rpgLBy7>

Part(s) 1: Extrude your parts from last week

Extrude the parts you sketched last week to 0.125" thick



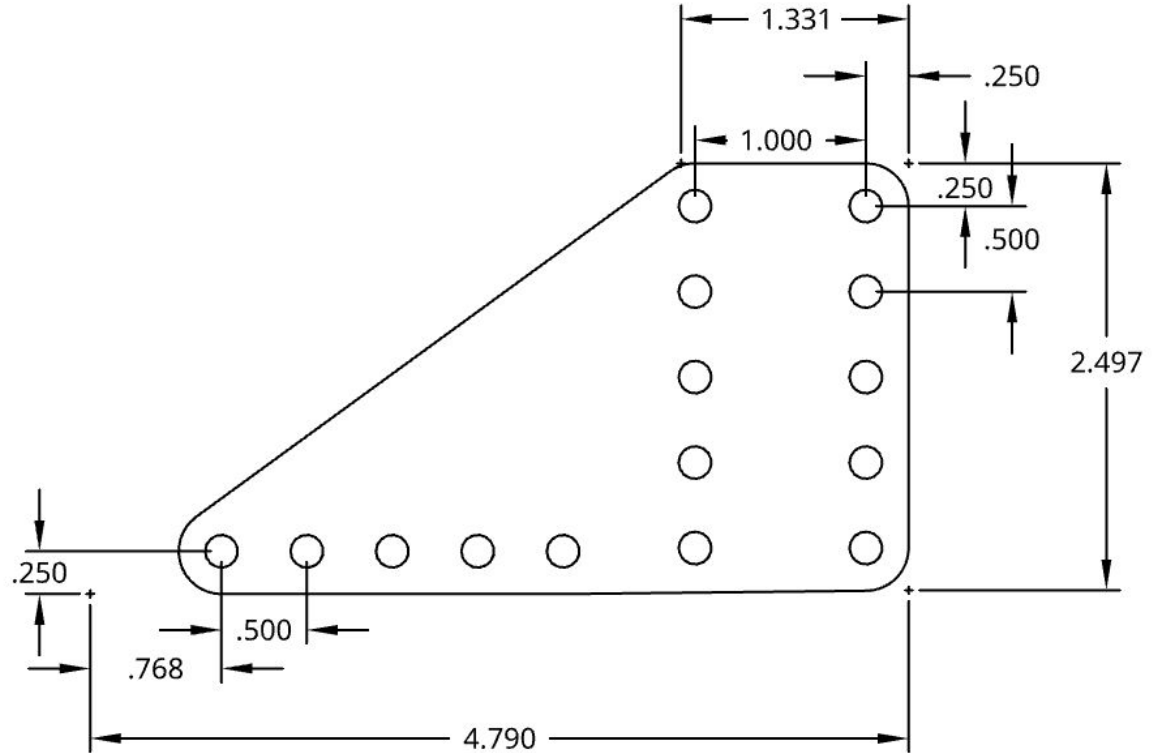
Part 2: Revolve Polycord Pulley



Part 3: Gusset using Patterns

- Extrude to 0.125"
- Ignore fillets

You're only allowed to draw 2 holes! Use linear patterns for rest



Example Submission - Course Completion

After completing a course you can go to [this link](#) to view your completion status

Activity

In Progress 3 Learning Paths 2 **Completed 2**

> Navigating Onshape Course | Self-Paced View Course

Introduction to Parametric Feature-Based CAD Course | Self-Paced View Course

An introduction to the principles of modeling in a parametric feature-based CAD system.

TOTAL HOURS	CONTENT VIEWED	COMPLETE
0.0	100 %	100 %

Any Questions?