

IAT 106: Spatial Thinking and Communicating

Lab 4 Isometric exercises, OnShape Introduction

1. Review of Lab3 Homework – (60 min)

Your TA will show sample answers and how to get them from the assignment from last week's lab. You should follow carefully and be sure to ask any questions you have about how to solve such problems.

2. Isometric exercises - (10 min)

These are additional isometric/multiview-type exercises. Your TA will walk through an example of each exercise type. Open the **iso-coded-views** exercise on Canvas, fill in the answers, and submit it before the start of next lab.

3. Intro to OnShape User Interface (20 min)

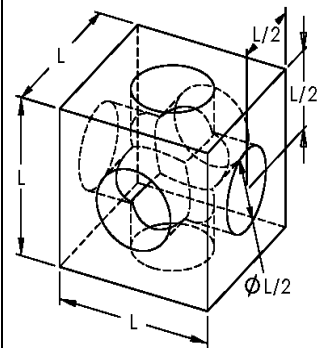
The TA will demo major parts of the OnShape interface by walking through building a simple object (a cube with 3 mutually perpendicular holes through it). In this first part, just watch the demo to get an overview of how the parts of the interface relate and are used.

4. Follow-along Demo: Cube-with-holes (30 min)

In this part of the lab, you'll follow the TA on your computer, using OnShape to make the cube-with-holes that was just demonstrated.

Your TA will walk you through constructing a cube with 3 orthogonal holes. Follow along and construct your own cube. When you are done, save the result as **BoxWithHoles**, show it to your TA, and submit the link to the file on Canvas as part of this Lab's homework.

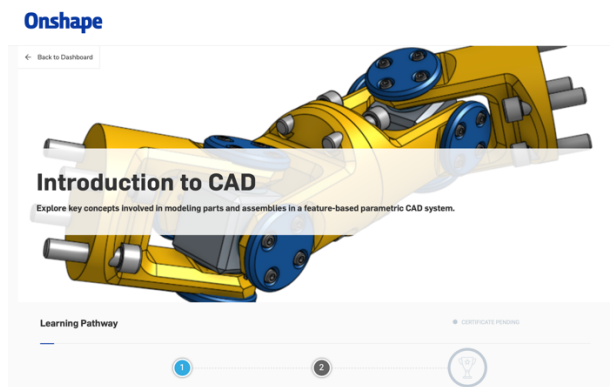
For the basic cube dimension "L", choose 40 mm (thus the holes will be 20 mm dia).



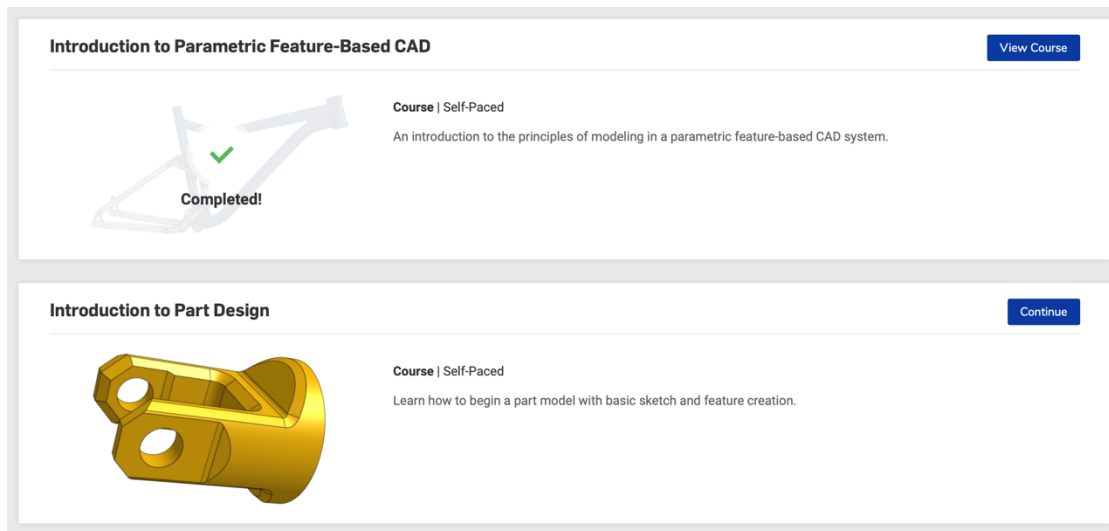
5. OnShape Learning Pathway (Basics) (60 min)

Please open the OnShape online website and start the learning path by clicking here:

<https://learn.onshape.com/learn/learning-path/introduction-to-cad>. The TA will show you where to find this learning pathway from inside the OnShape and then you'll build the part on your own. OnShape has excellent, step-by-step tutorial on this.



Within this learning path, you will have to do first two courses, i.e., *Introduction to Parametric Feature based CAD* and *Introduction to Part*. You'll have about 60 min to work on these courses; don't worry though if you don't finish, you can do this on your own outside of lab time and submit the links of the files via Canvas any time before the next lab.



6. Submitting your work

All geometries from parts 4 and 5 should be shared with the TA by sharing a single file link on Canvas. Here are the geometries that you should have in that link;

BoxWithHoles
SketchCreationExercise
ExtrudeExercise
RevolveExercise

All work is due before the start of the next lab.

Assessment

Item	Due	Individual or Team	Criteria	Activity Mark	Part Mark	Total
Isometric exercises	before next lab	individual			10	
Cube with holes	before next lab	individual			25	
Sketch Creation Exercise	before next lab	individual			15	
Extrude Exercise	before next lab	individual			25	
Revolve Exercise	before next lab	individual			25	
TOTAL						100