Ryerson Rams Robotics

Mechanical Training Package: 1 of 2

Start Date: Wed October 7, 2020

Due Date: Sun October 18, 2020

Introduction

Imagine you have just moved to a new country which speaks a language that you are not used to. Maybe you have taken a class years ago and have a slight background, or maybe you have only heard clips on TV of these new words. Either way, you need to become familiar with how the language works and how it flows.

Now imagine starting a new job, you need to become familiar with how the work gets done and how it flows through the company.

Now, you're joining the Ryerson Rams Robotics Team, and you need to learn how we do things.

Purpose

This package will get you up to speed on how to use our language of CAD.

Expectations

Pay careful attention to all the videos, understand and practice what they are explaining. These skills are extremely important to working efficiently in CAD software and are easily transferable to other CAD packages.

We advise you not to skip videos as you might miss a concept or an easier way to do things.

Side Note: there are multiple links in the following pages, each one has a number beside it. There is a list at the bottom of this document which contains all the links used with the corresponding number in case the hyperlinks don't work.

Assignment 1

Resources

Using this OnShape tutorial (1), provided through LinkedIn Learning, complete the first 3 modules circled below. For help logging into LinkedIn Learning and OnShape, view the tutorials:

LinkedIn Learning (2)
OnShape (3) → brings you to the "Create an Account" page. From there, fill out your information.
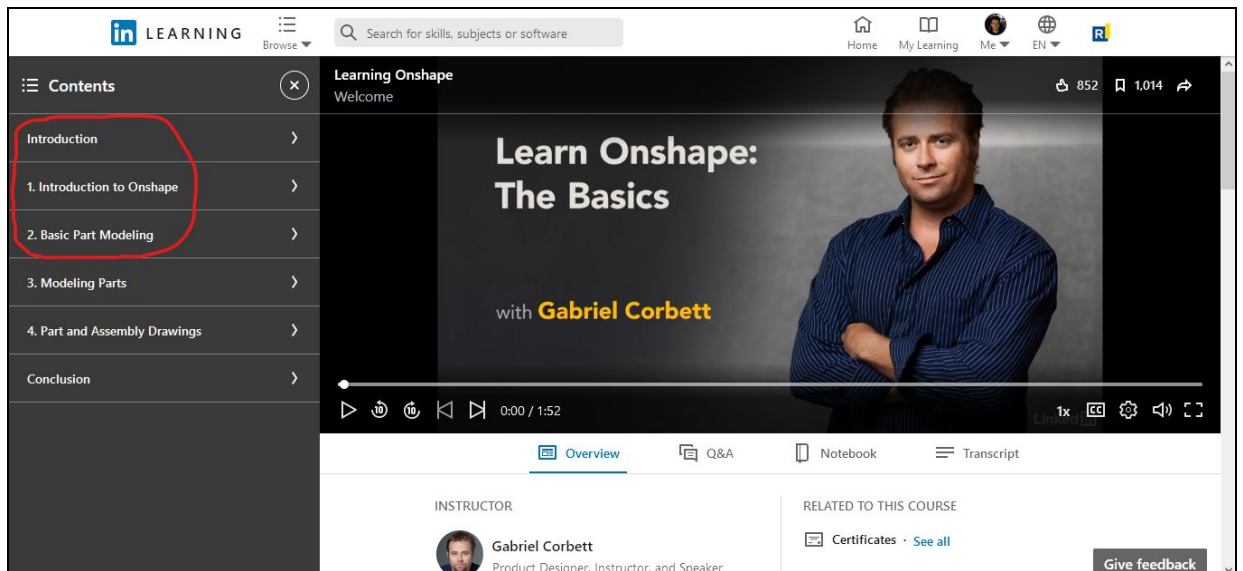

Figure 1.1: Modules to Complete

The files used in the tutorial are discoverable on the public database in OnShape. To make it easier for you, we have made a copy of the necessary files and added "R3 Training 1" to the end. For example, the complete skateboard is called "Lynda-SkateBoard-R3 Training 1" as there are no other OnShape files with that name. All of the file names used throughout the course are below.
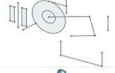
Documents				
	Lynda-Onshape-2.7-2.11-R3 Training 1 🌐 📍 Main	6:47 PM Today	me	me
	Lynda-Onshape-2.6-R3 Training 1 🌐 📍 Main	6:45 PM Today	me	me
	Lynda-SkateBoard-StartFile-R3 Training 1 🌐 📍 Main	6:42 PM Today	me	me
	Lynda-SkateBoard-R3 Training 1 🌐 📍 Main	6:37 PM Today	me	me

Figure 1.2: File Names used in the LinkedIn Course

Material Covered

This first assignment covers all the basics of CAD, such as sketch tools and constraints, and 3D extrusion tools.

Deliverables

The recreation of parts is extremely good practice for your sketching skills. Using the two diagrams on the next page, seen in Figure 1.3 and Figure 1.4, recreate the parts using OnShape.

Important Notes

- Do not copy other people's work, it is easy to see what was copied. Plus you are only cheating yourself.
- If you have technical issues or are having trouble using OnShape, please do your best to find the answers on the internet or ask your peers. If you cannot find it there, then write it down and bring it up during the mid-assignment, followup meeting.

Figure 1.3: Isometric View of First Part with Dimensions

Figure 1.4: Isometric View of Second Part with Dimensions

Submission

To submit your parts, simply name the parts using the following format. Also, it is critical that you **change the material to Aluminum 6061**, this way we can check the part. For a tutorial on how to assign the material, view this [tutorial (4)](#)

FOR FIGURE 1.3, the file name is: R3 - Training 1.1 - First Last Name
FOR FIGURE 1.4, the file name is: R3 - Training 1.2 - First Last Name

Here is an example of a part name: R3 - Training 1.1 - John Appleseed

Note: if there is a space missing or you forget to use the dash (-), or **any other deviations**, **we may not be able to find your work** in the public directory.

Once you do that, please fill out the google form, using [this link (5)](#). There are questions on there asking how you found the training, so please give us your feedback so we can improve this process.

Timeline

You will have approximately 1.5 weeks to complete this package, so it is due by <u>Sunday October 18 at 11:59pm</u>. Any changes made to the part after that deadline will be overlooked, so please finish on time. Submission of the google form will be accepted up to 30 minutes after the due date to allow for you to fully complete it.

Final Notes

We are extremely glad to see so many students getting involved with R3 this year and learning first hand skills on design, and teamwork and collaboration; all extremely important skills in your career.

There is a section on the google form for your feedback, it would be much appreciated if you filled it out with suggestions to improve this training.

Lastly, if you are unable to complete the assignment, please still submit your work and add a message to the final question (Anything else you would like to tell us?) in the form, which quickly describes why you could not complete it.

We are looking forward to seeing your work, best of luck!

Links Used Throughout the Package

1. https://www.linkedin.com/learning/learning-onshape/using-the-extrude-feature?u=2209922

2. https://docs.google.com/presentation/d/1jqVd6Ns8PqfIT8rFKz0vE75Zv0AZxR7IduTQ1jI_9WA/edit?usp=sharing

3. https://drive.google.com/file/d/1-j10IZZcY0hQ_yh9f-3_dSswseHDLnjU/view?usp=sharing

4. https://drive.google.com/file/d/1UjzyMuJS66zxpVQdiWs7LjYT8IZaAPxW/view?usp=sharing

5. https://forms.gle/wArRV2R81KZF3ZAM8