ECE 478/578 Intelligent Robotics 1

3D Design with Fusion 360

Lecture Overview Handout

Fall 2018

Husnu Melih Erdogan

Teaching Assistant

Electrical and Computer Engineering
Maseeh School of Engineering and Computer Science

Revision 1.0, 10.05.2018

Abstract:

These lectures introduce ECE 478/578 Intelligent Robotics 1 students 3D Design with Fusion 360. The main goal of these lectures is providing a good staring point for students to 3D designing parts for robots. We plan to use the 3D designs and parts that students are going to create in the robots that we have in the Intelligent Robotics Laboratory. The lectures and the assignments are specifically designed for beginner level learners.

Lecture Objectives:

After these lectures, students are going to be able use Fusion 360 and create simple designs for their robots that are used in the course projects. Also, they are going to learn how to prepare a design for 3D printing.

The subjects that are covered in this lecture.

- What is Fusion 360?
- How to Create a New Project
- Project Managing
- Creating Components
- User Interface
- Navigation Methods
- Sketching Tools
- Extruding Tools
- Adding Dimensions
- Using the Timeline
- Sketch Constraints
- Fillets and Appearances
- **Getting a 3D Design Ready for 3D Printing**
- How to Save, Share and 3D print a Project

Instructor: Husnu Melih Erdogan — Office Hours: Th 12-2pm

Teaching Assistant — FAB-70

Intelligent Robotics Laboratory — Email: herdogan@pdx.edu

Prerequisites and Required Tools:

- Computer (Windows or Mac OS)
    - Minimum system requirements for Fusion 360
        - https://knowledge.autodesk.com/support/fusion-360/learn-explore/caas/sfdcarticles/sfdcarticles/System-requirements-for-Autodesk-Fusion-360.html
- Download and install Fusion 360 Student Version
    - https://www.autodesk.com/products/fusion-360/students-teachers-educators

Lecture Reading and Videos:

Please check D2L for the most up to date reading materials and videos.

- Content
    - Lectures by Melih Erdogan Fall 2018
        - Lecture *
            - Overview
            - Slides
            - **Additional Documents and Videos**
            - Assignment

If there is any additional material, it is your responsibility to review them before you come to the class. When I teach my lectures, I assume that student already know about the things that are mentioned in the additional materials.

Recording:

The lecture is going to be recoded. Check Echo 360 for the videos.

Class Time and Sessions:

I usually divide each lecture (1 hour 50 minutes) into two sessions (50 min/session), and I usually prefer to use short (10 minutes) breaks between the sessions.

Lecture 1 - 10.15.2018 - Tuesday 2pm - 4pm

Assignments:

There is one assignment (Assignment 1) for this lecture. It is going to be released after the first lecture.

Where to find the assignment details?

Check D2L for assignment files and documentation.

- Content
  - Lectures by Melih Erdogan Fall 2018
    - Lecture *
      - Overview
      - Slides
      - Additional Documents and Videos
      - **Assignment**

Deadline: 10.21.2018 Sunday (11PM)

Submission: Use D2L to submit your assignment unless another assignment delivery method is mentioned in the assignment description.

Grading: I am going to post your grades on D2L.

- Undergraduate students can get max 4 points for each assignment.
- Graduate students can get max 3 points for each assignment.
- Please note that each point means 1% of your final grade.

Late Assignment Policy: Assignments that are turned in after the due date/time will cause you lose points:

- 1 day late (25%)
- 2 days late (50%)
- 3 or more days late (100%)

Plagiarism:

I have a ZERO tolerance policy when it comes to any kinds of plagiarism for my assignments.

- You are free to help from classmates as long as you mention it in your project report. I encourage you to work together and help each other.
- However, your assignment must be **100%** your own work. Otherwise, your assignment will not receive any grade and you will automatically get 0 points for your assignment and all the future assignments.
- **Students will be responsible for following the** PSU Student Conduct Code.