



Solid
Modeling

Rendering &
Animation

Soft Form
Modeling

Surface
Modeling

Product
Design

Modeling, rendering and animation with in five weeks!

This will be a fast paced, engaging course that explores the connection between the 3D design process used by industrial designers and how software applications are used to help communicate a product's form, function and use. These tools have made the process of creating a product easier, allowing for exploration of design alternatives. Through hands-on exercises, students will learn how to 3D model a product, create realistic renderings, develop an animation to tell a story and investigate how to export the 3D model for rapid prototyping, CAD transfer & online presentations.

We will learn the concepts and tools in the 3D design process by using an unique modeling and rendering tool, Fusion 360. This Autodesk program has changed the product development process by incorporating a variety of tools into one program. The basics of the program are easy to learn, but the tool set it offers is extensive and advance. The assignments will focus on one area of 3D development per week but examples will be presented that cover basic and advance material.

The course is open to all majors and does not require a prerequisite. This is a good option for students in the Industrial Design (ID) Minor program given the coverage of the design process and software applications used. To learn the basics of the software applications, students will be required to review specific courses at lynda.gatech.edu (free access to GT students) as part of their homework. Additionally, students taking the course can download an educational version of Fusion 360, which is full feature and free to use for students, start-ups and companies making under \$100k.

To learn more and see a video about the assignments, go to ...

<http://purdy.gatech.edu/summer/>

Learning Outcomes

Upon completion of the course, students are expected to demonstrate knowledge, skill and abilities in the following areas:

- Understand how 3D design principles fit into the overall computer aided industrial design (CAID) process
- Learn how to model forms quickly using the solid and/or sculpting tools
- Understand how to make complex and detail forms using the best tools
- Learn how to present 3D designs using renderings, animations, or rapid prototype output

Instructor

Tim Purdy

Lecturer, School of Industrial Design

tim.purdy@design.gatech.edu

<http://purdy.gatech.edu/>

Additional Information

<http://purdy.gatech.edu/summer/>

Class Time & Location

Early Short Summer Session

Pre-Requisites

None

Proctoring

Not required - students will submit assignments and homework through t-square

Course Format

Instructional methods for teaching the course include:

- Video lectures
- Self guided exercises with video tutorials
- Weekly email and online video chat support if needed

Weekly Learning Activities

- Lectures and exercises (5 hours)
- Assignment (3 hours)
- Total Hours (8 hours)

Scope of Work

Five assignments will be given during the course. Each assignment will take approximately 3 to 4 hours to complete.

Course Schedule

- Week 1 – Solid Modeling Concepts and Tools
- Week 2 – Presenting Designs through Renderings and Animations
- Week 3 – Soft Form Modeling with t-splines
- Week 4 – Surface Modeling Concepts and Tools
- Week 5 – Putting It All Together in Product Design

Final Deliverables

Each assignment will have it's own set of deliverables that is detailed within the assignment description.

Grading

Assignments 1 thru 5	80%
Homework	20%
Total	100%

Assignments: Each assignment will have its own grading criteria as noted in the assignment description. With each assignment, you will create a PDF grade sheet to document your assignment. The PDF grade sheet along with the source files(s) must be turned in the appropriate location and time as indicated in the assignment description. The PDF grade sheet will be marked up with comments and returned through Canvas.

Homework: During the course, five Homework assignments will be given. The lowest homework grade will be dropped at the end of the course.