

Introduction to CAD: Learn Fusion 360 in 90 minutes

Instructor Guide

This instructor guide is a comprehensive tool for facilitating this course in the classroom. Prepare to teach this course by thoroughly reviewing this document, as well as all related course materials and resources. You don't need be expert in Autodesk® Fusion 360™ to deliver this course. If you are new to Fusion 360 and/or new to CAD, we suggest developing a solid foundation in the core concepts of Fusion 360.

The following learning resources are pre-requisites to help prepare you in supporting your students through this course.

Fusion 360: Foundational Concepts (academy.autodesk.com) explores core concepts behind Fusion 360 CAD/CAM through a series of lectures and hands-on exercises. We highly recommend you enroll in this course if you are new to Fusion 360 and/or new to CAD.

We've summarized the core Fusion 360 skills in Intro to CAD: Learn Fusion 360 in a 90 minutes course so you can familiarize yourself with them before delivering this learning content in the classroom. It's always recommended that you work through the course yourself in preparation for each lesson.

- Sketch – Basic Sketch Modeling.
- Sketch – Application of Dimensions and Constraints.
- Feature – Extrude, Revolve, Sweep and Fillet.
- Sculpt – Subdivided revolve creation and edit.
- Assembly – Application of Joints and As-Built Joints.
- Assembly – Edit Joint Limits.
- Rendering – Scene Setup and Cloud Rendering.
- Drawings – View Creation, Dimensioning and Title Block edits.
- Collaboration – Inviting users to a project

Each lesson is listed below along with suggested time allocations for instruction. The referenced demonstrations are based on the step-by-step instruction included in the course. Review the video tutorials and/or step by step print guides for the detailed instruction in each lesson.

Getting Started

Total Time Required for Lesson: 20 minutes

Discuss Objectives: 3 Minutes

Demonstrate: 10 Minutes

- Review course overview and learning objectives
- Download the course resources and software
- Create an Autodesk ID
- Install the software
- Review the starter activity and articles

Hands on Time: 5 Minutes

Review Objective: 2 minutes



Sign In

Don't have an Autodesk account? [Signing up is easy](#)

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Sign In

Lesson 1: Starter Activity

Total Time Required for Lesson: 20 minutes

Discuss Objectives: 3 Minutes

Demonstrate: 5 Minutes

- Create decorative cutouts using parametric modeling.
- Make a photorealistic rendering of the model.

Hands on Time: 10 Minutes

Review Objectives: 2 minutes



Lesson 2: Introduction to the Fusion UI

Total Time Required for Lesson: 20 minutes

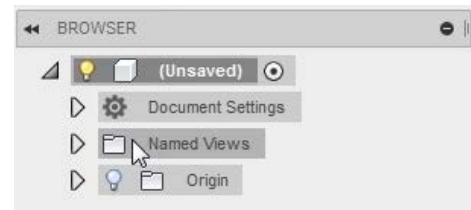
Discuss Objectives: 3 Minutes

Demonstration: 5 Minutes

- Identify the various areas in the Fusion 360 UI.
- Access user preferences.
- Customize the Fusion 360 interface.

Hands-on Time: 10 Minutes

Review Objectives: 2 minutes



Lesson 3: Sketch the Lamp Base

Total Time Required for Lesson: 25 minutes

Discuss Objectives: 3 Minutes

Demonstration: 5 Minutes

- Create a parametric sketch.
- Turn a sketch into a solid.
- Add realistic details.

Hands-on Time: 15 Minutes



Review Objectives: 2 minutes

Lesson 4: Model the lamp arm

Total Time Required for Lesson: 20 minutes

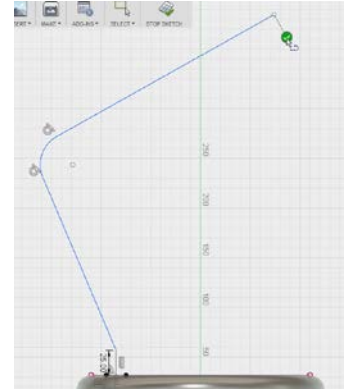
Discuss Objectives: 3 Minutes

Demonstration: 5 Minutes

- Create complex sketch geometry.
- Create a swept pipe.

Hands-on Time: 10 Minutes

Review Objectives: 2 minutes



Lesson 5: Model the lamp shade fittings

Total Time Required for Lesson: 25 minutes

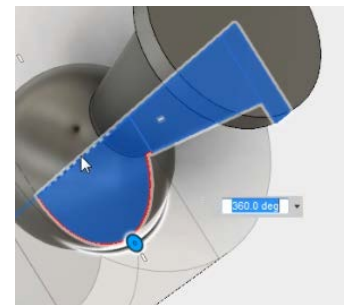
Discuss Objectives: 3 Minutes

Demonstration: 5 Minutes

- Identify bodies and components.
- Design components in context.

Hands-on Time: 15 Minutes

Review Objectives: 2 minutes



Lesson 6: Sculpt the lamp shade

Total Time Required for Lesson: 30 minutes

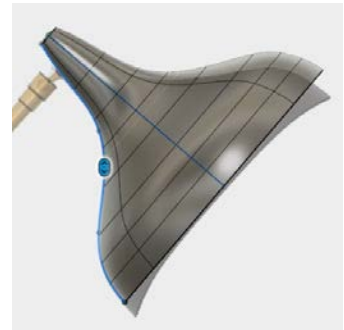
Discuss Objectives: 3 Minutes

Demonstration: 5 Minutes

- Create a sub-divided form.
- Manipulate organic geometry.
- Turn a surface into a solid.

Hands-on Time: 20 Minutes

Review Objectives: 2 minutes



Lesson 7: Assemble lamp components

Total Time Required for Lesson: 30 minutes

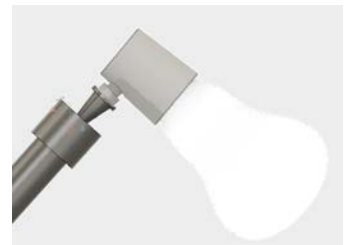
Discuss Objectives: 3 Minutes

Demonstration: 5 Minutes

- Understand assembly structure.
- Explain bodies and components.
- Assemble components using joints.

Hands-on Time: 20 Minutes

Review Objectives: 2 minutes



Lesson 8: Document the lamp design

Total Time Required for Lesson: 15 minutes

Discuss Objectives: 3 Minutes

Demonstration: 4 Minutes

- Detail and document a design.
- Export and share a detailed drawing.

Hands-on Time: 6 Minutes

Review Objectives: 2 minutes



Lesson 9: Create a photo real render

Total Time Required for Lesson: 15 minutes

Discuss Objectives: 3 Minutes

Demonstration: 5 Minutes

- Setup a render.
- Understand appearances.
- Produce a cloud rendered image.

Hands-on Time: 5 Minutes

Review Objectives: 2 minutes



Lesson 10: Export for 3d printing

Total Time Required for Lesson: 15 minutes

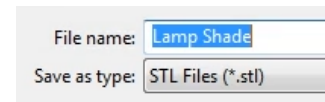
Discuss Objectives: 3 Minutes

Demonstration: 5 Minutes

- Understand STL export settings.

Hands-on Time: 5 Minutes

Review Objectives: 2 minutes



Lesson 11: Design Review and Collaboration

Total Time Required for Lesson: 20 minutes

Discuss Objectives: 3 Minutes

Demonstration: 5 Minutes

- Collaborate with other users.
- Markup a design on the web.

Hands-on Time: 10 Minutes

Review Objectives: 2 minutes



Next Steps

Total Time Required for Lesson: 10 minutes

Discuss Objectives: 1 Minutes

Demonstration – 1 Minutes

- Launch website <http://academy.autodesk.com> and <http://academy.autodesk.com/portfolios>
- Create an Autodesk Design Academy account
- Share designs to Portfolio
- Review additional courses under the Learn and Explore menu tab
- Review Inspiration menu for real world examples of industry design

Hands-on Time: 5 Minutes

Review Objectives: 3 minutes