



## Introduction to CAD/CAM

You don't need be expert in Autodesk® Fusion 360™ to attend this course, but 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** 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 Introduction to CAD/CAM course so you can familiarise yourself with them before attending this learning content in the classroom.

- **Sketch – Basic Sketch Modelling.**
- **Sketch – Application of Dimensions and Constraints.**
- **Feature – Extrude, Revolve, and Fillet.**
- **CAM – Creation of toolpaths, Post Process and Simulate.**
- **Collaboration – Inviting users to a project**



Each lesson is listed below along with suggested time allocations for instruction.

## 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](#)

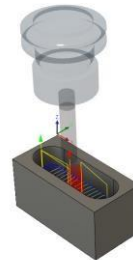
  
 Password [forgot?](#)  

## Lesson 1: Starter Activity Total Time Required for Lesson: 20 minutes

**Discuss Objectives: 3 Minutes Demonstrate: 5 Minutes** • Simulate a CNC toolpath.

- Identify a tool collision. **Hands on Time: 8 Minutes**

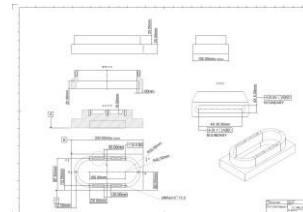
**Review Objectives: 2 minutes**



## Lesson 2: Process planning

**Total Time Required for Lesson: 50 minutes Discuss Objectives: 3 Minutes Demonstration: 5 Minutes**

- Identify tools and toolpaths for a part.
- Create a process plan. **Hands-on Time: 40 Minutes Review Objectives: 2 minutes**

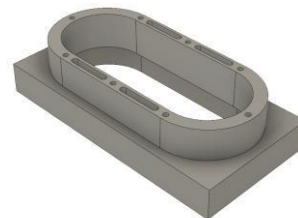


## Lesson 3: Modelling

**Total Time Required for Lesson: 75 minutes Discuss Objectives: 3 Minutes Demonstration: 5 Minutes**

- Create a sketch.
- Add a dimension.
- Add a constraint.
- Create basic sketch entities.

**Hands-on Time: 65 Minutes Review Objectives: 2 minutes**



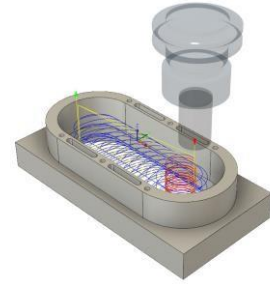


### Lesson 4: Mill toolpaths

**Total Time Required for Lesson: 80 minutes Discuss Objectives: 3 Minutes Demonstration: 5 Minutes**

- Create a mill CAM setup.
- Create basic mill toolpaths.

**Hands-on Time: 70 Minutes Review Objectives: 2 minutes**

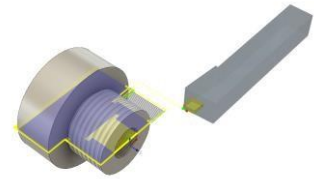


### Lesson 5: Lathe toolpaths

**Total Time Required for Lesson: 65 minutes Discuss Objectives: 3 Minutes Demonstration: 5 Minutes**

- Create a lathe CAM setup.
- Create basic lathe toolpaths.

**Hands-on Time: 55 Minutes Review Objectives: 2 minutes**



### Lesson 6: Documentation

**Total Time Required for Lesson: 40 minutes Discuss Objectives: 3 Minutes Demonstration: 5 Minutes**

- Export G-code.
- Create a setup sheet.

**Hands-on Time: 30 Minutes Review Objectives: 2 minutes**



### Next Steps

**Total Time Required for Lesson: 10 minutes Discuss Objectives: 1 Minutes Demonstration – 1 Minutes**

- Launch website [www.autodesk.com/certifieduser](http://www.autodesk.com/certifieduser) and <https://www.nims-skills.org/resources/skill-standards/123>
- Review ACU materials
- Review NIMS Cam Level 1 standard

**Hands-on Time: 5 Minutes Review Objectives: 3 minutes**

