



CORE CAD

Instructor guide

Course duration: ~395 minutes

Level: Beginner

Product: Autodesk® Fusion®

This instructor guide is a comprehensive tool for facilitating this in the classroom. Prepare to teach this course by thoroughly reviewing this document, as well as all related course materials and resources.

We've summarized the core Fusion Skills in the CORE CAD 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.

Learning objectives:

- Navigate the Fusion interface and manage project files.
- Create and constraint 2D sketches.
- Model solid 3D parts with revolve and extrude.
- Apply features such as fillets, holes, and patterns.

Each module 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 for the detailed instruction in each module.

Getting started

Total time required for module: 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 objectives: 2 minutes

Introduction to intent driven design in Fusion

Total time required for module: 20 minutes

Discuss objectives: 3 minutes

Demonstrate: 5 minutes

- Identify bodies and components
- Describe design intent
- Describe parameter-based modeling

Hands-on time: 10 minutes

Review objectives: 2 minutes

Set up a project and members

Total time required for module: 45 minutes

Discuss objectives: 3 minutes

Demonstrate: 10 minutes

- Create a new project
- Create a project sub-folder
- Upload a design

Hands-on time: 15 minutes

Review objectives: 2 minutes

Datasets: *01 FSAE Rim Blank.f3d*

Module quiz: 15 minutes

Create a fully defined parametric sketch

Total time required for module: 80 minutes

Discuss objectives: 3 minutes

Demonstrate: 15 minutes

- Create a detailed sketch
- Apply sketch dimensions
- Apply sketch constraints
- Convert a sketch line to a centerline

Hands-on time: 20 minutes

Review objectives: 2 minutes

Datasets: *01 FSAE Rim Blank.f3d*

Practice: 10 minutes

Challenge: 15 minutes

Module quiz: 15 minutes

Create a fully defined parametric design

Total time required for module: 110 minutes

Discuss objectives: 3 minutes

Demonstrate: 15 minutes

- Create a revolved solid
- Create an extruded cut
- Create a user parameter
- Apply fillets and chamfers

Hands-on time: 40 minutes

Review objectives: 2 minutes

Datasets:

01 FSAE Rim Blank – Sketch1.f3d

01 FSAE Rim Blank – Revolve.f3d

01 FSAE Rim Blank – Parameter.f3d

12 Extrude.f3d

13 Revolve.f3d

20 Patterns.f3d

16 Fillets.f3d

21 Hole.f3d

Practice: 15 minutes

Challenge: 20 minutes

Module quiz: 15 minutes

Assignments: 120 minutes

- **Course Assessment:** 30 minutes
- **Course Challenge:** 90 minutes
 - **Dataset:** *Rim Blank Challenge.f3d*