

## Instructor guide

# Assembly Modeling

Course duration: ~116 minutes

Level: Beginner

Product: Autodesk® Fusion®

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

We've summarized the core skills in the Assembly Modeling module so you can familiarize yourself with them before delivering this learning content in the classroom. It's always recommended that you work through the module yourself in preparation for each module.

### Learning objectives:

- Understand external reference assemblies.
- Create joints and constrain components.
- Organize an assembly.
- Create a hybrid assembly.

Each part of the 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 module. Review the video tutorials and step-by-step print guides for the detailed instructions.

The module contains the following resources:

- 36 minutes of videos covering assembly modeling.
- Step-by-step pdf and PowerPoint documents to accompany each video.
- 1 lecture PowerPoint and video covering the module topic
- 5 dataset files for use when following the videos.
- Quiz questions with timecodes for remedial knowledge check.
- Exam-style end of module questions.
- 1 practice exercise with exercise file and solution video.
- 1 challenge assignment.

**Pre-requisites:**

This module reviews foundational concepts for assembly modeling in Fusion. Topics are introduced at a beginner skill level for users new to CAD or new to Fusion.

**Instructional video:**

Each video is between 7 and 11 minutes long. They all begin with a list of learning objectives covered in the video. The datasets mentioned throughout the videos are available if students wish to follow along or practice after the video.

All the videos will take 36 minutes to watch, although if you are using the datasets and following along this will increase the time.

**Practice exercises:**

There is a practice exercise included to explore topics covered in the module. The practice exercise is designed to give students an opportunity to test their knowledge and apply what they have learned. The practice exercise is accompanied by a video solution.

**Challenge assignments:**

There is a challenge assignment that includes focusing on a set of topics covered in the module. Students are presented with a challenge, and they apply their skills and the techniques learned to solve the challenge. The challenge assignment exercise is often open ended with no single correct solution.

**Video quiz questions:**

Quiz questions are included with each video of the module and the timecodes are included so that students can review the related sections in the video for questions they have answered incorrectly.

**End of module quiz questions:**

Ten end of module questions are included which cover topics in that module for extra practice.

**Module contents**

The module is listed below along with suggested time allocations for instruction. The referenced demonstrations are based on the video instruction included in the module. Review the video tutorials for the detailed instruction in each module.

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## **Assembly Modeling**

**Total time required for module:** 116 minutes

**Discuss objectives:** 3 minutes

**Lecture:** 5 minutes

**Demonstrate:** 15 minutes

- Understand external reference assemblies.
- Create joints and constrain components.
- Organize an assembly.
- Create a hybrid assembly.

**Hands-on time:** 36 minutes

**Review objectives:** 2 minutes

### **Datasets:**

*Pivot Bracket.f3d*

*Air Cylinder.f3d*

*Rod End.f3d*

*Pneumatic Cylinder Base Part.f3d*

*Pneumatic Assembly.f3z*

*Pneumatic Assembly.f3d (practice and challenge exercise use dataset build in module)*

### **Assignments:**

- **Practice exercise:** 20 minutes
- **Challenge exercise:** 15 minutes

- **Module and video quiz:** 20 minutes
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