# Fusion Essentials
## Training course outline

Autodesk Fusion provides a single cloud-based platform that you can use to carry out all aspects of product development, from design and testing, through to simulation and fabrication.

*Fusion Essentials* provides a thorough grounding for beginners. On completion, you will be able to use Fusion to create and amend production-ready parts and assemblies.



### Course summary
*Fusion Essentials* teaches newcomers the key skills required for product development.
The topics covered include:

- Sketching
- 3D modelling
- Assemblies
- Visualisations, rendered images and animations
- Simulation
- Drawings
- Importing CAD data into Fusion.

### Duration
Three days

### Who should attend?
Newcomers to Fusion, and novice users.

### Prerequisites
No prior Fusion or 3D modelling knowledge is required.

Experience using a CAD application, such as AutoCAD, is beneficial but not essential.

### Windows or Mac
Fusion works similarly running on a Windows computer or Mac, and our course is suitable for users of both platforms.

### In-class or live online
You can attend in-person at our centres, or participate live online from your place of work or home.

To read about our approach to online training, see armada.co.uk/liveonline.

### General information
Armada is a long-standing Autodesk authorised Training Centre (ATC), and our courses are accredited by Autodesk.

Courses are hosted by Autodesk Certified Instructors (ACIs) with vast experience of using the application professionally.

Whilst attending training at our centres, you'll have the use of a computer running licensed software to practice the techniques taught. You can choose to use a Windows computer or a Mac.

Refreshments and lunch are provided.

Course fees can be paid by card or bank transfer. We accept purchase orders from UK-registered companies and public sector organisations.

### Course materials and certificate
You'll receive:

- A comprehensive training guide and practice files.
- An e-certificate confirming successful completion of an accredited *Fusion Essentials* course.

### Method of delivery
Training is designed for the busy professional, being short and intensive and combining lecture and demonstration. Practical exercises carried out under guidance help you learn the techniques taught.

You have ample opportunity to discuss specific requirements with the trainer.

### After course support
Following training, you're entitled to 30 days' email support from your trainer.

### Further information
See: armada.co.uk/course/f360.

### Course syllabus
See over.

### Follow-on course
- Fusion CAM and CNC (2 days).

# Course syllabus

| Session | Topics |
|---|---|
| **Introduction to Autodesk Fusion** | Autodesk Fusion fundamentals |
| |     Feature-based modelling |
| |     Parametric features |
| |     Managing assembled designs |
| |     Design documentation |
| | Getting Started |
| |     Understanding workspaces |
| |     Understanding projects |
| | The Autodesk Fusion interface |
| |     Ribbon, BROWSER, accessing commands |
| | Design navigation and display |
| |     Design navigation |
| |     ViewCube |
| |     Named views |
| |     Design display |
| |     Geometry selection |
| |     Environment and effects |
| | Managing your designs and project data |
| |     Importing and exporting data |
| |     Using A360 and Fusion to manage data |
| |     Version management |
| **Create your first feature with quick shapes** | Design units and origin |
| | Quick shape creation |
| **Sketching** | Introduction to sketching |
| |     Starting a new sketch |
| |     Creating sketch objects |
| |     Turning sketches into 3D objects |
| | Sketch Entities |
| |     Line, spline, points |
| | Rectangles |
| |     Circle, arcs |
| | Dimensioning |
| |     Dynamic input |
| |     Sketch dimensions and constraints |
| |     Extruding and revolving a sketch |
| | Additional entity types |
| |     Polygons, Ellipse |
| |     Slot |
| |     Tangent arc using a line |
| |     Tangent line between circles or arcs |
| |     Fillets |
| |     Construction entities |
| | Editing tools |
| |     Trim, Extend, Mirror |
| |     Center dimensions |
| |     Radius or diameter dimensions |
| |     Angular dimensions |
| |     Over- constrained sketches |

| Session | Topics |
|---|---|
| **Sketching** *(continued)* | Additional dimension tools |
| | Sketched secondary features |
| | Using existing geometry to project new geometry |
| **3D modelling** | The different modelling options available |
| | Solid modelling |
| |     Direct modelling and history modelling |
| | Parametric modelling |
| |     Changing aspects of your model that automatically update |
| | Part libraries and content |
| |     Accessing standard parts |
| |     Importing parts data into a design |
| | Feature duplication tools |
| |     Mirroring geometry |
| |     Patterning features |
| |     Rectangular and circular patterns |
| |     Pattern on path |
| | Pick and place features |
| |     Fillets, chamfers, holes |
| |     Editing pick and place features |
| | Construction features |
| |     Construction planes, axes and points |
| | Equations and parameters |
| | Additional features |
| |     Thread |
| |     Press pull |
| **Assemblies** | Approach 1: Traditional distributed design |
| | Approach 2: Top-down (multi-body) |
| **Visualisations, rendered images and animations** | Materials and appearances |
| | Decals |
| | Environments |
| | Rendering |
| | Animations |
| | Exploding assemblies |
| **Simulation** | Example of real-world simulation |
| **Drawings** | Creating 2D drawings from a model |
| | Add dimensions, balloons and annotations |
| | Creating a Bill of Materials (BOM) |
| **Importing CAD data** | Importing other file types - documents, images, specifications |