A logo of a company

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Autodesk | Fusion

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# **Course prerequisite:**

1. **Create fully defined sketches.**
2. **Use**:

* Solid
* Freeform
* Direct,
* modelling tools.

1. **Create**

* Construction planes
* Construction axes

1. **Inspect geometry with:**

* Section analysis
* Measure

1. **Create and Manage:**

* Assembly components

1. **Understand:**

* Assembly joints
* Rigid groups
* Motion links
* Interference

1. **Create drawings with:**

* Views
* Annotations
* Title blocks

# **Introduction to Fusion**

 “It is necessary sometimes to take one step backward to take two steps forward” Vladimir Lenin.

# **Who is Autodesk?**

Autodesk, Inc. is a software company that creates 3D design, engineering, and entertainment software. Their products are used by professionals and consumers in many industries.

#### **What they do:**

* Create software for design, engineering, and entertainment
* Help users visualize and simulate their ideas before they are built
* Provide software for architects, engineers, designers, manufacturers, and more

#### **What their products include:**

* AutoCAD, a computer-aided design (CAD) software
* Revit, a 3D design software
* Fusion360, a tool for 3D design
* Maya, a software for entertainment
* 3DS Max, a software for 3D design

#### **Where they operate:**

* Headquartered in San Francisco, California
* Have offices worldwide, including in the US, Canada, and other countries
* Sell their products through resellers, distributors, and their online store

#### **Who they serve:**

* Architecture, engineering, and construction industries
* Product design and manufacturing industries
* Digital media and entertainment industries

# **What is Autodesk Fusion?**

Autodesk Fusion is a cloud-based software platform that allows users to design and manufacture products. It combines CAD, CAM, CAE, and PCB tools into one platform.

#### **What Autodesk’s Fusion is used for:**

* **Product design**: Create 3D models of products, including sketches, surfaces, and meshes
* **Manufacturing**: Use machining tools to create parts, including turning, probing, and inspection
* **Simulation**: Run simulations to test designs
* **Electronics design**: Use schematic design and PCB layout tools to design electronics

#### **Who uses Autodesk’s Fusion?**

* **Industry professionals**: Engineers, machinists, and industrial designers use Fusion to design and manufacture products
* **Educators and students**: Eligible students and educators can use a free version of Fusion

# **Why is Autodesk Fusion used by tech-companies in a professional setting?**

As mentioned earlier, Autodesk Fusion is a cloud-based software package that helps tech companies design and manufacture products more efficiently. It's used by industrial designers and engineers to create 3D models, simulate performance, and collaborate in real time.

Benefits of Autodesk Fusion include:

* **Rapid prototyping**: Quickly test ideas and identify issues early in the design process
* **Simulation**: Test how a design will work in real-world conditions
* **Collaboration**: Work with others in real time and on the same file
* **Design for manufacturing**: Reduce waste, rework, and production costs
* **Connected data**: Seamlessly integrate data across design, engineering, and manufacturing
* **AI and data analytics**: Predict maintenance needs and improve process efficiency
* **Extensions**: Unlock advanced design and manufacturing technologies

Autodesk Fusion is a cost-effective, scalable, and flexible solution that can be used for a variety of purposes, including product design, rapid prototyping, and engineering.

## **Learning the core components of Fusion**

“In my book experience out-ranks everything.” Captain Rex.

A close up of a helmet

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## New to Fusion

Autodesk Fusion formerly known as Fusion360 is a cluster of:

* Computer Aided Design (C.A.D)
* Computer Aided Milling (C.A.M)
* Computer Aided Evaluation (C.A.E)
* Printed Circuit Board (P.C.B),

into a single integrated cloud service, Platform as a Service (P.a.a.S).

Fusion is a combination of snappy user-friendly and precise:

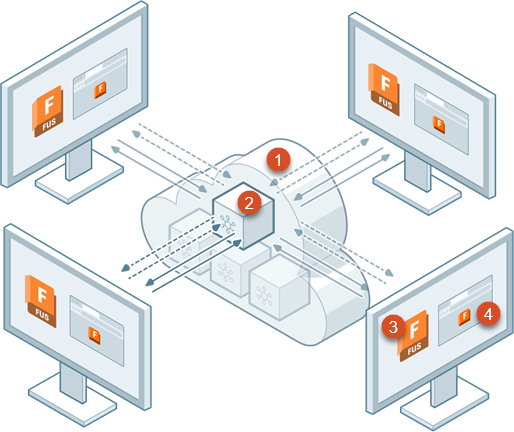
* Organic modelling
* Solid modelling,

allowing seamless transition from design to manufacturing products.

With an Autodesk account, Fusion software and the Fusion web-client allows teams to collaborate and share among their members by utilizing projects and secured folders. These projects and secured folders are all stored in the cloud, in a Fusion hub.

The Fusion hub is accessible to you and your fellow team members.

**Diagram representing the flow cycle of Fusion hub:**



1. Cloud
2. One of several hubs in the cloud.
3. Fusion connected to the hub from a desktop computer (Fusion app).
4. The Fusion web-client (browser), connected to the hub from a desktop computer through the installed fusion app

## Your Autodesk account and Fusion:

To start using Fusion an administrator needs to invite you to a hub. A hub is a collaborative space where you and your team members work together on designs.

You will receive this invitation via email.

**How to join a hub through a received invitation?**

1. **Click the link on the invitation email.**

**If you know you were invited to join a hub but don’t see an invitation in your inbox, do the following:**

* 1. Check your spam email folder.
  2. Make sure your administrator used the correct email address.
  3. If those steps are unsuccessful, open the Fusion web-client and follow the instructions in Switch between hubs to open any hubs you have been invited to.

1. **After clicking the email link, a page opens in your browser and one of the two things will happen**
   * + - If you are new to Autodesk, you will be asked to create an Autodesk account and sign-in.
       - If you already have an Autodesk account, you will then be asked to sign-in, if you have already done so.

Once signed-in, the hub you were invited to opens in your default browser:

A screenshot of a computer

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This browser interface is known as the Fusion web-client, which you can use to manage data and projects.

**Tip:** Download Fusion software from the link in the notification banner.

You will also receive a confirmation email to notify you that you have successfully joined the hub.

**Note:** There might be a short transition time where Fusion will indicate that you are currently in a trial period. This will stop when your administrator assigns you a license, at which point you will receive another confirmation email notifying you of the matter.

Once you have an Autodesk account, you can start using Autodesk Single-Sign-On (S.S.O). Single-Sign-On is an authentication-method that enables you to sign into multiple Autodesk products and services using your credentials.

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## Start Fusion and the Fusion web-client