



## Overview

The focus of this module is centered around the implementation of **CAD software** towards additive manufacturing in the working environment. With a predominant use of Autodesk Fusion 360, learners will be enabled to produce complex three-dimensional geometries correctly set out to 3D print.

The strategy in this course is to start developing basic geometries using the **Autodesk Fusion 360** software towards understanding the software interface and processes. The interface will be followed by form manipulation and model preparation, both essential components in successful additive manufacturing.

## Features and Benefits

1. This is a recognized Autodesk course and a preparation course for the **AutoCAD Fusion ACU exam certification**.  

2. Take full advantage of our new **Hybrid Learning** by attending on **campus** or **virtually**. Have all your classes ready to be **downloaded** and **watched**, anytime, anywhere.  

3. Attendees will **gain confidence** and enhance their practical skills and knowledge in this field.

## Course Prerequisites

It is recommended that delegates have a working knowledge of one or more of the following:

- Attended Introduction to Technical Drawing / Experience with Drafting, design, modelling of 3D parts or components
- Computer Literate specifically focused on Microsoft Windows

## Course Outline

### Module 1: Exploring the User-Interface of Autodesk Fusion 360

In this module you will explore the basic user interface and learn how to navigate in Fusion 360.

- Starting the software
- Creating an Autodesk User Profile and using the profile to sign into Autodesk Fusion 360
- Navigating the Menus
- The View Cube
- Canvas and Marking Menu
- Navigation Bar

### Module 2: Basic Form Creation

In this module you will learn more about the form feature and how to create basic designs.

- Starting a project
- Creating your first design
- Design tools

## Duration

**In Class/Virtual Class**, Hybrid Learning

**2 Days** (08:30 – 16:00) Classes are presented via our **Hybrid Learning** allowing learners the **flexibility** to attend on campus or in the comfort of their home or workplace.

## What you get

On completion the learner will earn:

- **Certificate of Completion** from **The Academic Institute of Excellence**

*Note: All certificates are electronically issued.*

## Delivery Methods

- Full Time

### Module 3: Form Manipulation

In this module you will learn how to use manipulation tools.

- Basic modelling tools
- Editing and Applying materials
- Basic form visualization

### Module 4: Model Preparation for Fabrication

In this module you will explore the analysing tools and how to prepare your design for CNC Milling.

- Analysing shell thicknesses and overhangs for 3D printing
- Preparing corners, radius and assembly for CNC Milling

### Module 5: Model Export & Slicing

In this module you will explore the analysing tools and how to prepare your design for 3D printing.

- Analysing shell thicknesses and overhangs for 3D printing

### Module 6: Utilizing external slicing software in preparation for 3D printing

Various 3D printers come with their manufacturer slicing software, which is recommended to use with the printer. However, these slicing softwares all utilize similar approaches to translate virtual geometry into code that can be understood by the 3D printer.

- What is the purpose of slicing software
- How 3D printers use the information from the slicer
- Basic form setup and preparation within the slicing software



## Outcomes & Skills

Upon completion of this course, learners will have acquired these skills

Learners will be exposed to the modelling capabilities of Autodesk Fusion 360 on 3D printing/additive manufacturing / reductive manufacturing

- Basic Software Interface
- Basic Form Creation
- Form Manipulation
- Model Preparation for Fabrication
- Model Export and Slicing