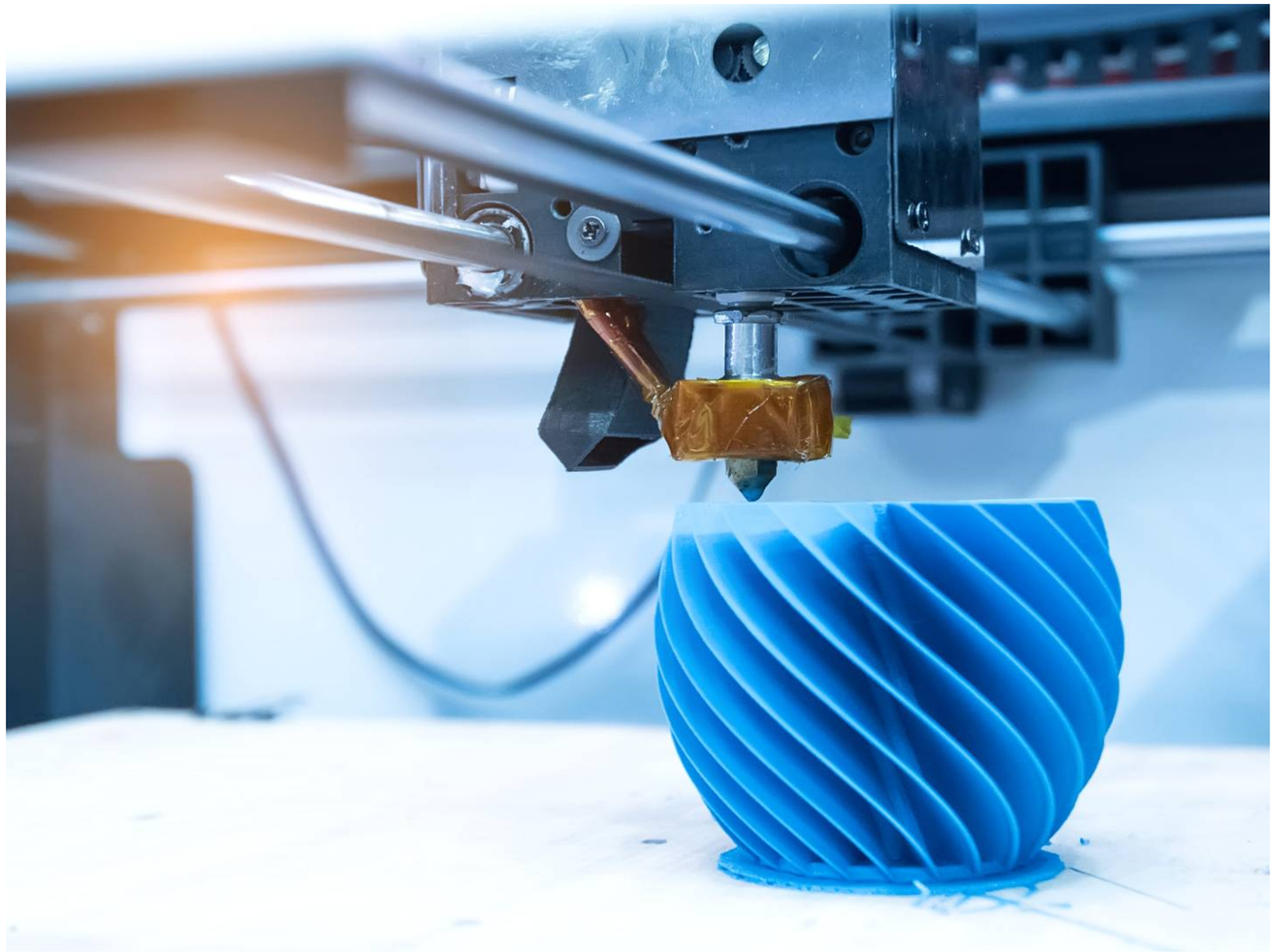
DMF101: Additive Manufacturing for Innovative Design



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Introduction

This course introduce you to the importance of Additive Manufacturing-3D Printing and its huge role in global prototyping, product development and innovation. You will develop a rich knowledge of 3D printing technologies, devices, capabilities, materials and applications. You will learn the trade-offs between various 3D printing processes and technologies, along with the various related software tools, processes and techniques. The course emphasise on project based learning & getting familiar with 3D printing, modelling and 3D scanning with reverse engineering. It is not easy as it seems and the only way to develop skills on this domain is to practice and build innovative projects with your own hands.

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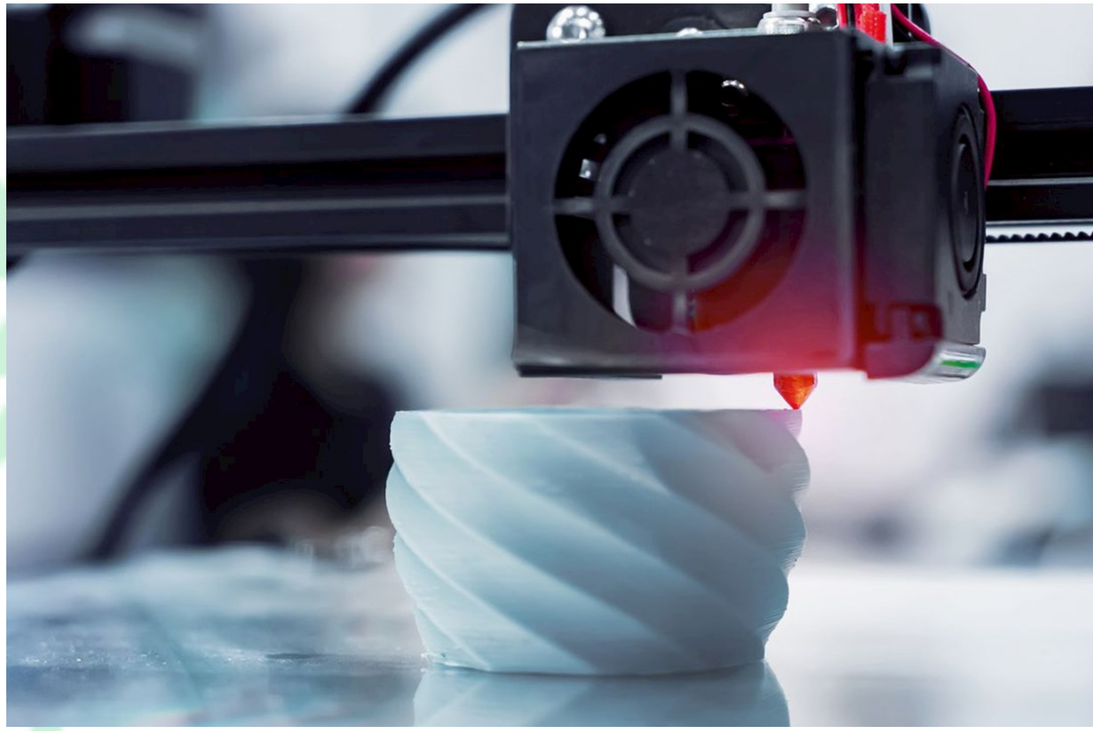
This Course

- Improve your knowledge and vision on working with 3D printers well as fundamentals & core concepts of additive manufacturing.
- Build your ability to analyse and innovate. You will work on different 3D printers, diagnose and debug their errors. You will develop analytical skills which cannot be solely obtained from books and videos.
- Not only help you to learn the art of 3D printing but as you perform different tasks in a team, it will eventually develop and improve your skillsets as an innovative designer.
- Project based learning with a fun atmosphere & series of assessments will enhance your designing skills that are useful for additive manufacturing.



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What you'll learn

- Introduction to 3D printers & printing
- Familiarity with 3D printing environment
- Basic understanding of the machine
- Introduction to the slicing software
- Adding custom printers using CURA
- Use and importance of filaments
- Use of different 3D printing technologies
- Comparing different 3D printing technologies
- Costing of 3D printing
- 3D Scanning & Reverse Engineering

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Our Aims

- Quick learning in a smart way
- “Intelligence, Innovate, Inspire”
- Creating a fun learning atmosphere
- Enhancement of additive manufacturing skills
- Performing different tasks with smart approach
- Thinking out of the box
- Transforming conventional educational methodology to a project based learning & creativity

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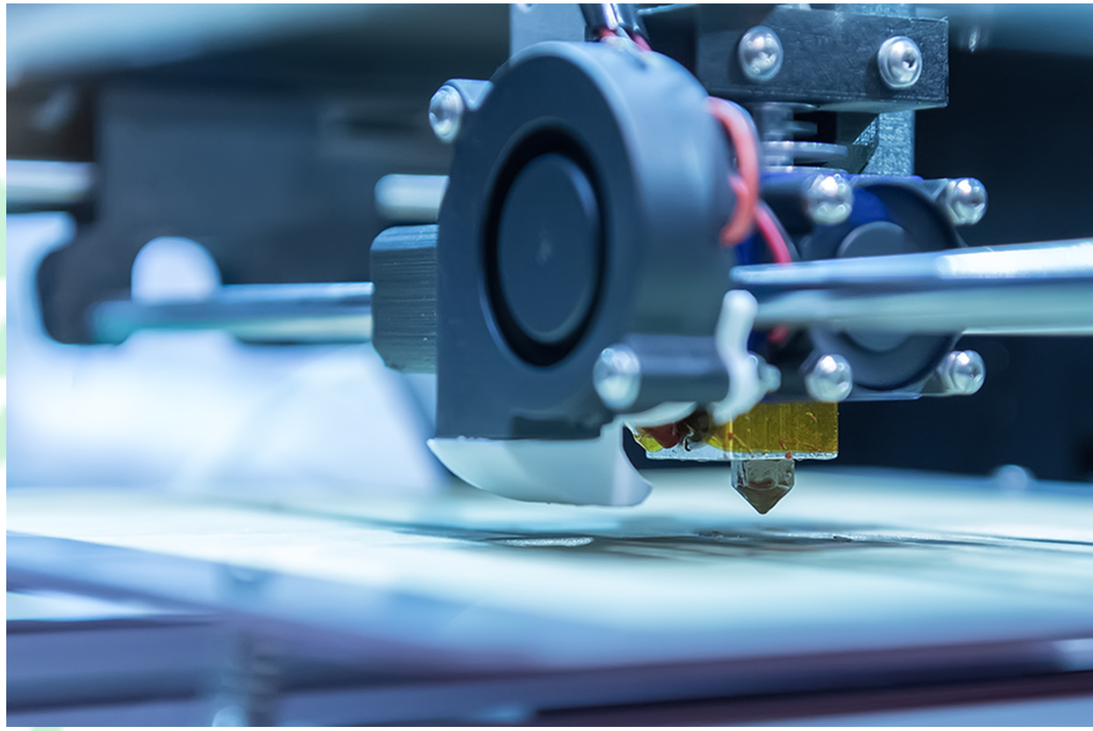
Who You'll Meet

- Highly qualified Engineering faculty with vast theoretical knowledge and massive hands-on experience.
- Experts in digital designing, manufacturing and fabrication processes.
- Highly skilled academia and industry leaders.



What You'll Experience

- An in-depth series of online/offline lectures, with high quality graphics & detailed descriptions.
- Hands-on machining and manufacturing experience through multitudes of real life projects with real life applications.
- Interactive sessions with academia & industry experts.

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What You'll Use

- Slicing Software
- Filaments
- FDM 3D Printers
- SLA 3D Printers
- Designing & Modelling Software
- 3D Scanners
- Reverse Engineering Tools

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Course Structure

Week 1

Fundamentals of 3D printing
- Introduction to 3D Printing
- Different 3D Printing technologies
- Printing pre designed prototype

Week 2

Overview of SLA Printing
- Introduction to SLA Printers
- Basic functionality of SLA Printers
- Printing & costing comparison

Week 3

Core Concepts of FDM/FFF Printing
- Introduction to CURA
- Adding custom Printer
- Characteristics of FDM & FDM Printing

Week 4

Modelling, 3D Scanning & Reverse Engineering
- Introduction to modelling & designing
- Modelling customize part
- 3D Scanning & Reverse Engineering

Join Us:

- To be a smart thinker
- To be a project leader
- To be a quick learner
- To be a team player
- To be a troubleshooter
- To enhance your Vision

Course Instructor

Hafiz Mansoor Ahmed
Mechatronics Engineer, SZABIST, Karachi

He is the Instructor for the course “Additive Manufacturing for Innovative Design” in the department of Emerging technologies at THF. His areas of expertise are Additive/Subtractive manufacturing, project based learning, research and development, 3D Scanning & reverse engineering, designing and rapid prototyping. Before joining THF, he was working as a Design Engineer in RapidTack . In RapidTack he designed & prototype multiple projects regarding to the current pandemic situation including smart pandemic helmet, air filtration system & currency sanitisation with critical & smart thinking which leads his way to design, innovate & inspire

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