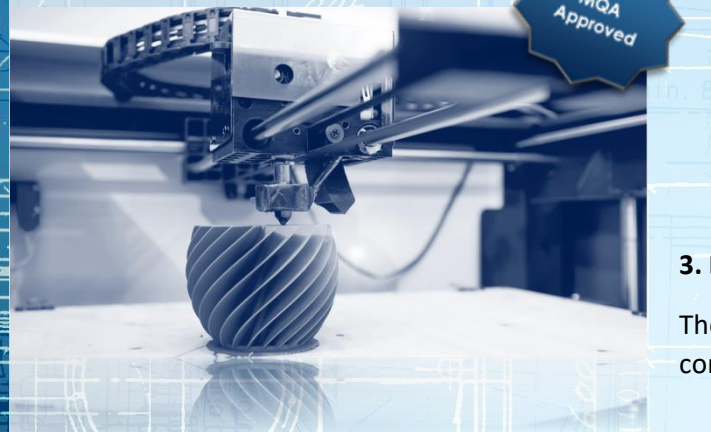
UNIVERSITY OF MAURITIUS

3D Printing: Beginner's Guide to Additive Manufacturing and Product Design using Ultimaker Cura Slicer & Fusion 360



1. INTRODUCTION

This is a beginner's course in Additive Manufacturing (3D-Printing). Additive manufacturing is the construction of a three-dimensional object from a CAD model via filament or resin-based 3D printing technology. 3D-Printing enables realization of quick prototyping and complex designs.

2. OBJECTIVES

At the end of the course, participants are expected to be able to:

- To acquire fundamental CAD skills on Fusion 360
- To generate quick prototype designs and to export for 3D printing
- To master the manipulation of Ultimaker Cura Slicer software
- To fine tune settings on Ultimaker Cura Slicer for improved 3D-prints
- To acquire the skills for manipulating and printing of 3D models in 3D Printer
- To troubleshoot common issues encountered during filament-based additive manufacturing operations.

3. DURATION

The duration of the course is eighteen (18) hours, conducted on six consecutive Saturdays:

- 02 September 2023
- 09 September 2023
- 16 September 2023
- 23 September 2023
- 30 September 2023
- 07 October 2023
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4. CURRICULUM

Session	Course Outline
1	**Introduction to Additive Manufacturing (AM)** - General Introduction to AM - Types of AM Processes - Materials Consideration in AM - Benefits & Limitations of AM
2	**Pre-Process Description in AM** - Overview of Stages in AM - Design Iteration - Trade-off in AM (Print-duration Vs Quality) - Sizing to Print - Refining Stage
3	**Introduction to Fusion 360** - Introduction to Fusion 360 Workspace - Sketch Operations - Dimensioning - Creation of 3D models - Advanced Features - Exporting File To Slicer
4	**Introduction to Ultimaker Cura Slicer** - General Overview of Ultimaker Cura Slicer - Profile Creation & Management - Print Layer Settings - Other Parameter Settings (Support, Infill, Speed) - 3D Model Manipulation - G-Code printing file format
5	**Processing & Post-Processing in AM** - Printer Setup - Printing Checklist - Filament Selection - Preheat Stage Settings - Bed Adjustment & Calibration
6	**Tips & Tricks in AM for High Quality Prints** - Analysis of 3D Printed Object - Refining 3D Printed Object - Summary Guidelines for Improved 3D Prints - Troubleshooting 3D Printer

5. VENUE & FACILITIES

The short course will be held in CAD/CAM lab of the Faculty of Engineering, Sir Edouard Lim Fat Engineering Tower, University of Mauritius, Réduit.

6. TRAINING METHODOLOGY

Delivery of the course will be mainly in the form of lab-based practical sessions including brief lecture sessions.

AUTODESK® FUSION 360™

CURA-SLICER

7. CERTIFICATE

Participants who have successfully completed the in-lab practical assignment in this short course, will be awarded a certificate of successful completion issued by the University of Mauritius.

8. WHO SHOULD ATTEND

The short course has been designed and customized for engineers, architects, and product designers. This introductory short course will cover the fundamental topics in AM, namely the modelling, pre-processing and printing stages.

Note: Limited Number of Seats

9. TRAINING/REGISTRATION FEES

Rs. 15,000 per participant

10. RESOURCE PERSONS

Dr RAMFUL Raviduth, Senior Lecturer in the Mechanical & Production Engineering Department (University of Mauritius) will be the resource person for this short course.

11. STARTING DATE

Saturday 02 September 2023

Registration Deadline: 15 August 2023

12. MODE OF PAYMENT

Payment can be effected in Cash, Card, or Cheque. Cheque must be drawn to the order of **University of Mauritius** and **crossed.**

Payment must be effected at UoM Cash Office, Finance Section by 15 August 2023.

MQA Approved

UNIVERSITY OF MAURITIUS

3D-PRINTING

Short Course APPLICATION FORM

3D Printing: Beginner's Guide to Additive Manufacturing and Product Design using Ultimaker Cura Slicer & Fusion 360

(MQA Approved)

Name of Participant: .....

Postal Address: .....

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Tel: ..... Fax: .....

Mobile Tel: .....

Email: .....

Organization: .....

Position: .....

Signature of Participant: .....

Date: .....

Application forms, duly filled, should be sent to the following address by latest 15 August 2023. Forms can also be sent by fax:

Dr RAMFUL Raviduth
Mechanical & Production Engineering Department
Faculty of Engineering
University of Mauritius, Réduit, 80837,
Republic of Mauritius
Tel: +230 403 7400 (Ext 4092) | Fax: +230 465 7144
Email: r.ramful@uom.ac.mu

The University of Mauritius reserves the right not to run the course should the number of participants be insufficient.