

3D Printing Training Course Outline – Full 2 Day Course – On Demand

2025

Module 1: Introduction to 3D Printing

- Overview of 3D Printing Technology
- Types of 3D Printing Processes
 - Fused Deposition Modelling
 - Stereolithography
- Importance of 3D Printing in Various Industries

Module 2: 3D Printing Materials

- Types of 3D Printing Materials
 - Plastics
 - Metals
 - Ceramics
- Material Properties and Selection Criteria
- Filaments, Powders, and Resins
- Recycled and Sustainable Materials
- Material Handling and Storage

Module 3: 3D Printing Hardware and Equipment

- Components of a 3D Printer
- Choosing the Right 3D Printer for Your Needs
- Calibration and Maintenance
- Print Bed Preparation
- Troubleshooting Common 3D Printing Issues

Module 4: 3D Modelling and Design

- Introduction to 3D Modelling Software
- Creating 3D Models from Scratch
- Importing and Editing Existing 3D Models
- Design Considerations for 3D Printing
- Preparing 3D Models for Printing

Module 5: 3D Printing Workflow

- Slicing 3D Models for Printing
- Understanding G-code
- Print Speed and Layer Resolution
- Supports and Rafts
- Post-Processing Techniques
 - Sanding
 - Painting

Module 6: Advanced 3D Printing Techniques

- Multi-Material and Multi-Colour Printing
- Printing with Flexible and Composite Materials
- Industrial and Large-Scale 3D Printing
- Bioprinting and Medical Applications
- Additive Manufacturing Innovations

Module 7: Applications of 3D Printing

- 3D Printing in Aerospace and Automotive Industries
- Healthcare and Medical Applications
- Prosthetics
- Dental
- Organ Printing
- Architecture and Construction
- Consumer Products and Customisation
- Art and Sculpture

Module 8: Quality Control and Troubleshooting

- Ensuring Print Accuracy and Precision
- Identifying and Rectifying Print Defects
- Quality Inspection and Testing
- Post-Printing Finishing Techniques
- Regulatory Compliance and Safety

Course Objectives:

3D Printing is a method of creation that requires only some basic computer skills, and some basic rules of printing and design. This Course will allow students to discover for themselves the potential and limitations of 3D Printing through a practical design project and a basic outline of the theoretical knowledge, however no prior technical knowledge is required.

Outcomes for the student:

- Be able to think critically, and have a basic understanding and knowledge base of 3D Printing
- Be able to access specific resources needed to 3D print an object; include CAD software, CAD libraries, additional CAD and printing web tutorials, and 3D printing service providers
- Be able to open, view, manipulate and edit three dimensional object files
- To create new three-dimensional object files from scratch.
- Prepare and optimize those files for 3D printing o Successfully fabricate the file design through a 3D printing service provider using appropriate material and method selections
- Identify potential Economic, or Business Opportunities within the South African local Environment.

Cost and Venue

- Please contact us for more information, and we will be happy to assist you or your organisation.
 - Kriveshin Govender –
 - 082 794 7084
 - info@sharpshoot.co.za
- Available Venues:
 - Overport, Durban
 - On Site (Please contact us for more information)



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