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# **FDM Certification**

## General Assessment Information

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General Assessment Information  
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Stratasys, a company with over three decades of experience in driving change in 3D printing technologies, partnered with NOCTI for development of its FDM Certification to assist in ensuring knowledge and skills in technologies, applications, materials, operations, software, design, and post processing. Available for secondary and post-secondary programs, and industry professionals seeking certification, the certification is available to verified Stratasys sites. The certification is available to verified Stratasys sites offering secondary and postsecondary programs as well as industry professionals seeking certification.

**Test Type:** This certification assessment has been customized by Stratasys. In partnership with NOCTI for development services and delivery through NOCTI's online testing system, this written assessment measures occupational technical skills and theoretical knowledge.

**Development Team:** Subject Matter Experts recruited by Stratasys served as the development team.



15.1307 - 3-D Modeling and Design  
Technology/Technician



Science, Technology,  
Engineering, and Mathematics



17-2199.00 - Engineers, All Other

## Written Assessment

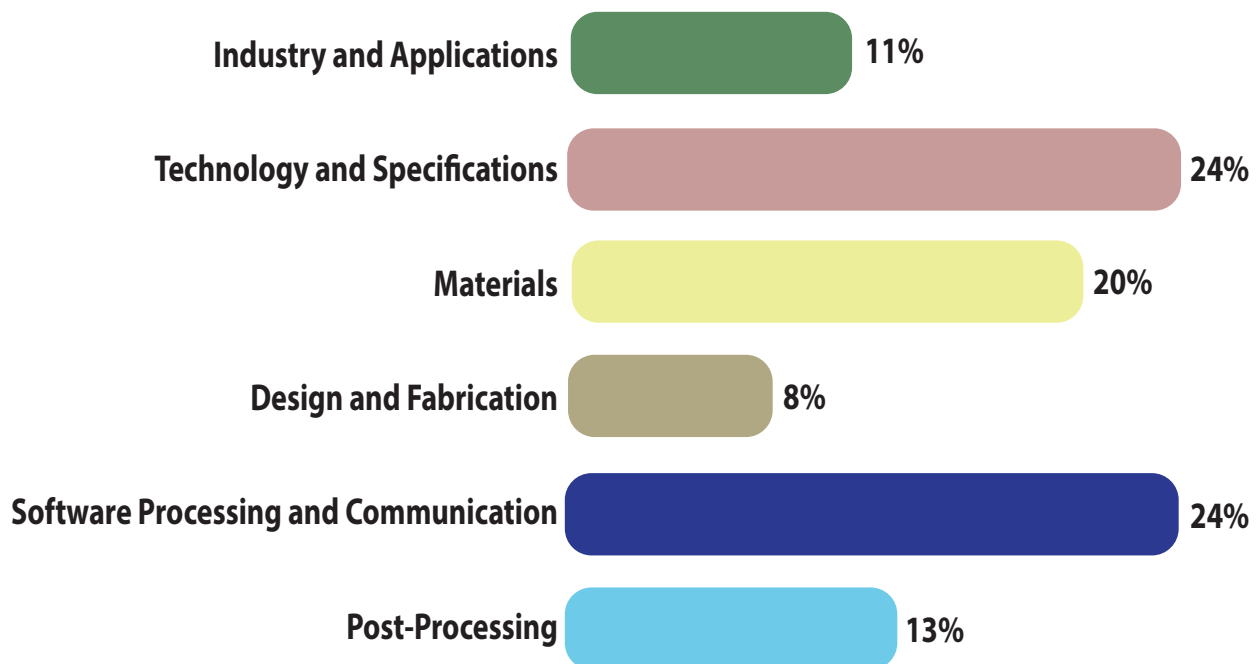
This written assessment consists of questions to measure an individual's factual theoretical knowledge.

**Administration Time:** 2 hours

**Number of Questions:** 100

**Number of Sessions:** This assessment may be administered in one or two sessions.

### Areas Covered



## Specific Competencies and Skills Tested in this Assessment

### Industry and Applications

- Describe industry utilization for Fused Deposition Modeling (FDM)
- Identify primary applications for FDM

### Technology and Specifications

- Identify key safety areas
- Define system specifications for FDM Stratasys printers
- Recognize system hardware
- Describe FDM operations
- Articulate performance of routine user-maintenance

### Materials

- Define American Society for Testing and Materials (ASTM) standards
- Discuss material properties and performance by application
- Identify support materials that can be used with associated model material
- Identify compatible materials available for various platforms

### Design and Fabrication

- Describe additive general design considerations including MESH anatomy
- Articulate impacts of CAD to STL export settings

### Software Processing and Communication

- Demonstrate GrabCAD Print workflow
- Demonstrate Insight workflow and advanced processing

### Post-Processing

- Define post-processing, finishing, and tools used for post-processing
- Define primary FDM processes
- Define secondary FDM processes

## Sample Questions

**Using FDM for evaluating early concepts is called**

- A. manufacturing
- B. inspection
- C. prototyping
- D. validation

**When should the user manually calibrate the printer?**

- A. at the start of each print job
- B. if part quality deterioration is noticeable
- C. on the start of every week
- D. in the morning before the first job is printed

**The purpose of a Stratasys material data sheet is to give**

- A. information on target applications for the material
- B. material safety information according to the Global Harmonized System
- C. detailed printer setup for the chosen material
- D. detailed material properties according to ASTM Testing Standards

**Why is support material needed in 3D printing?**

- A. it mixes with model material to improve build quality
- B. to support overhangs and internal cavities
- C. to improve the surface finish of models
- D. to strengthen build materials which would otherwise be brittle

**The purpose of anchor pins is to**

- A. make the part stronger
- B. prevent warping/curling
- C. stabilize tall geometries
- D. increase print speed

