Rapid prototyping technologies are revolutionizing the fields of manufacturing and engineering. Intelitek’s Rapid Prototyping Program includes robust curriculum covering this exciting and evolving field.

This course engages students by means of hands-on activities and compelling online curriculum that includes:

- A comprehensive overview of the history of rapid prototyping, current and emerging technologies and career choices in the field.
- Multi-level activities including creating prototypes from specifications using various rapid technologies.
- A capstone project that challenges students to create a prototype using the technology of their choice, assemble and test the prototype and report the results of the project.

Rapid Prototyping is an excellent add-on to Engineering and CAD programs.

Rapid Prototyping includes everything you need for successful blended learning. Through LearnMate™, essential resources are provided for both students and teachers.

- Students are always one click away from glossaries and help files available on each page.
- Teachers have instant access to handouts, tips and detailed activity instructions.

Fundamental level activities are designed to accommodate labs with no hardware, while advanced activities give labs with access to 3D printers and CNC machines complete instructions for hands-on activities building prototypes with the same technologies used in industry.

As a total lab solution, Rapid Prototyping can be equipped with Intelitek’s line of rapid prototyping technology hardware, including the Solido SD300 Pro 3D printer or one of Intelitek’s proven educational CNC machines.

Intelitek’s Rapid Prototyping course is powered by LearnMate™, Intelitek’s innovative e-learning platform. LearnMate’s self-paced interactive content may be deployed stand-alone or through the robust learning management system (LMS). The LearnMate™ e-learning suite provides everything needed for the ultimate blended learning experience:

- SCORM-compliant interactive content
- Anytime, anywhere accessibility
- Student and class management
- Grade tracking
- Skill/competency reporting mapped to national academic skill standards

www.intelitek.com
Rapid Prototyping and Concurrent Engineering

Materials Included

- Rapid Prototyping E-Learning Curriculum

Course Outline

1.1 (Core): Introduction to Prototyping
  1.1.1: What is Prototyping?
  1.1.2: Types of Prototypes
  1.1.3: Prototypes and the Engineering Cycle
  1.1.4: Prototypes and Concurrent Engineering
  1.1.5: Time to Market

1.2 (Core): Rapid Prototyping Technologies
  1.2.1: Uses for Rapid Prototyping
  1.2.2: The History of Rapid Prototyping
  1.2.3: Additive and Subtractive Processes
  1.2.4: The Future of Rapid Prototyping

1.3 (Activity): Rapid Prototyping in Industry
  1.3.1: Careers in Rapid Prototyping
  1.3.2: Rapid Prototyping Industry-Report

1.4 (Core): Proof of Principle Prototypes
  1.4.1: Prototyping Materials
  1.4.2: Prototyping Kits
  1.4.3: Fit, Form, and Function

1.5 (Activity): Creating Simple Prototypes
  1.5.1: Advanced Activity: Six-bar Rocker Linkage

1.6 (Core): Additive Processes
  1.6.1: Stereolithography (SLA)
  1.6.2: Selective Laser Sintering (SLS)
  1.6.3: Laser Powder Forming (LPF)
  1.6.4: Laminated Object Manufacturing (LOM)
  1.6.5: Fused Deposition Modeling (FDM)
  1.6.6: Solid Ground Curing (SGC)
  1.6.7: 3D Ink Jet Printing
  1.6.8: Shape Deposition Manufacturing (SDM)

1.7 (Activity): Advanced Additive Prototyping
  1.7.1: Fundamental Activity: Scissors Mechanism

1.8 (Core): Subtractive Processes
  1.8.1: CAD/CAM/CNC
  1.8.2: Milling
  1.8.3: Turning
  1.8.4: Advanced Machining
  1.8.5: Materials
  1.8.6: Applications
  1.8.7: Advantages and Disadvantages

1.9 (Activity): Advanced Subtractive Prototyping
  1.9.1: Fundamental Activity

1.10 (Core): Selecting A Rapid Prototyping Process
  1.10.1: Key Benefits of Rapid Processes
  1.10.2: Prototyped Products

1.11 (Project): Creating a Solution
  1.11.1: Fundamental Project
  1.11.2: Advanced Project

1.12 (Project): Advanced Additive Prototyping
  1.12.1: Advanced Activity: Six-bar Rocker Linkage

1.13 (Project): Advanced Subtractive Prototyping
  1.13.1: Advanced Activity: Machining a Part

Materials Included

- Rapid Prototyping E-Learning Curriculum

Lab Solutions for Rapid Prototyping

Select from the following add-on hardware for a total rapid prototyping lab solution!

Solido SD300 Pro

- The only truly classroom-ready 3D printer!
  - Unlike other 3D printers, the SD300 Pro is perfectly suited for educational settings:
    - No chemical bath!
    - No curing time!
    - No knife or other special instruments required!

Super proLIGHT 1000 Mill

- Industrial strength features:
  - User-friendly CNCBase control software
  - Standard Fanuc-compatible G&M codes
  - Precision linear motion system
  - Optional 4th axis and 4-station ATC

proLIGHT 3000 Lathe

- Versatile and classroom-friendly machine tool includes:
  - User-friendly CNCBase control software
  - Safety features tailored for classroom use
  - Precision linear motion system
  - Optional tailstock, tool turret and shield opener

Rapid Prototyping courses can be combined with intelitek’s dynamic e-learning content as part of a comprehensive engineering program! Customize your program by combining standards-based LearnMate™ E-Learning curriculum for:

- Rapid Prototyping
- CAD
- Mechanical Engineering
- Precision Machining
- Advanced Manufacturing
- and more!

Make Rapid Prototyping part of a comprehensive STEM program!

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