Computer Integrated Manufacturing

Must have made an 85 or better in the course to earn Certificate and proven to be competent in the following skills:

Manufacturing Engineering and Design Experience

- Collaborate effectively with peers to solve problems using a design process
- Apply an engineering design process to solve a problem
- Design, build, and test a manufacturing system model
- Design and test a program to control a system
- Select material for an application
- Design a part using CAD modeling software
- Select tooling and create tool paths using CAM software
- Optimize tooling, tool paths and feed rates to safely and efficiently mill a part
- Operate a mill to produce a part
- Evaluate prototyping techniques and choose the appropriate method for a product
- Create programs for devices to communicate with a simulated manufacturing system
- Investigate manufacturing engineering career

Tools and Software

- CAD modeling software – Autodesk ® Inventor ®
- CAM software for 3D milling – Edgecam
- CNC milling machine – e.g. ProLight 1000
- Shop tools and hand tools
- Manufacturing and robot design system – VEX Robotics Design System
- Programming language – ROBOTC