



LAKES
REGION
COMMUNITY
COLLEGE



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Automated Manufacturing Certificate

Gain hands-on experience with 3D modeling, blueprint reading, industrial measurement, and basic electrical and programming concepts used in modern manufacturing. You'll also develop essential workplace skills to prepare for entry-level roles or further training in the manufacturing field.

This program is part of the ReGen Valley Common Campus.

Potential Jobs/Careers

- Manufacturing Technician
- Process Technician
- Automation Technician
- Electro-Mechanical Technician

Program Outcomes

After completing this program, students will be able to:

- Implement and control automated manufacturing processes.
- Design components and assemblies using SolidWorks.
- Operate 3D printers and CNC equipment to fabricate components.
- Understand the flow of materials and resources within the manufacturing cycle.
- Program robots, industrial controls, and automated equipment.
- Demonstrate theoretical knowledge of electronics, mechanics, computer systems, and software control systems.

Automated Manufacturing

Certificate Requirements

Fall Semester	First 8 Weeks	Credits
FYE100L	College Essentials	1
CBAM110L	Industrial Print Reading and Metrology	3
	TOTAL	4

Fall Semester	Second 8 Weeks	Credits
CBAM101L	Manufacturing Career Prep	1
CBAM105L	SolidWorks and 3D Printing	3
	TOTAL	4

Spring Semester	First 8 Weeks	Credits
CBAM115L	Electrical for Manufacturing	3
CBAM120L	Control Fundamentals with Python	3
	TOTAL	6

Spring Semester	Second 8 Weeks	Credits
CBAM125L	Manufacturing Fundamentals	3
	TOTAL	3

Total Credits for Certificate = 17

Course Descriptions

Manufacturing Career Prep

This course covers resume writing, interview skills, career exploration and networking. In addition to basic technical training, the course emphasizes the development of workplace communication, teamwork, and critical thinking skills.

Control Fundamentals with Python

Students will learn the fundamentals of Python, including basic syntax, data structures, control flow, and functions, while also gaining hands-on experience writing, debugging, and running Python programs for a mechatronics system.

SolidWorks and 3D Printing

This course provides a comprehensive introduction to SolidWorks (CAD) software. Students will learn the fundamentals of 3D modeling, part design, assembly creation, and technical drawing. The course focuses on developing skills to create precise models, understand design principles, and apply proper CAD techniques to real-world problems.

Industrial Print Reading and Metrology

This hands-on course provides students with an introduction to mechanical measurement techniques and engineering blueprint reading. Students will learn to accurately interpret mechanical drawings including tolerances, welding symbology, and Geometric Dimensioning and Tolerancing; and perform precise measurements using a variety of instruments.

Electrical for Manufacturing

Students will learn the functions of basic electrical components found in the manufacturing environment. They will build circuits from schematics, wiring diagrams, and work instructions; and assess circuits using basic electrical measuring equipment to test circuit function, record data, and locate circuit failures.

Manufacturing Fundamentals

Students will explore the manufacturing process as a sequence of material manipulation as well as a product of management. Current managerial philosophies and their effects on manufacturing are examined. This information will be synthesized and applied to a manufacturing model, allowing students to test their theories on managing a manufacturing facility with limited resources.