

## MANUFACTURING-RELATED PROGRAMS AND SERVICES

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**Community College:** Lower Columbia Community College

**General College Description:** Lower Columbia College is located on a 38 acre site with 27 college buildings in Longview, Washington. The college enrolls approximately 4,000 students each quarter, with approximately 31 percent of enrollees focused on workforce training, 47 percent on transfer, 20 percent on basic skills and 2 percent on other. Transfer degrees and professional-technical training are available in 54 disciplines. In terms of outcomes, 82 percent of professional/technical training graduates are employed within 9 months of completion.

**Manufacturing-Related Program Areas:** The college currently offers three main focus areas within manufacturing-related programs and enrolls approximately 300 students annually:

- **Advanced Manufacturing** (web links pending)
  - Computer Aided Design: <http://lowercolumbia.edu/nr/exeres/BE034063-EF99-4B47-9A3E-E4D4B99AF439>
  - Advanced Manufacturing Technology Associate in Applied Science
  - Manufacturing Occupations Certificate of Proficiency  
<http://lowercolumbia.edu/nr/exeres/525BEC0A-7234-40AF-A5F2-C28761C183F7>
  - Fundamentals of Manufacturing Certificate of Completion
- **Machine Technology:** <http://lowercolumbia.edu/nr/exeres/EDE1AA52-A5A6-4E53-A4C5-66AC17597835>
  - Machine Technology Associate in Applied Science
  - Machine Technology - Computer Numerical Control (CNC) Certificate
  - Machine Tool – Machinist Certificate of Proficiency
- **Welding:** <http://lowercolumbia.edu/nr/exeres/C449EEB8-13FD-46CC-8F85-C64C01501886>
  - Welding Associate in Applied Science
  - Welding- Certificate of Proficiency

A Certificate of Proficiency (45+ credits) combines specialized occupational courses with supporting background skills in communication, computation and other workplace requirements. A Certificate of Completion includes 15-44 credits of occupational training. Lower Columbia offers “stackable” credentials, so students can build on short-term certificates to earn higher level degrees.

Lower Columbia has just revamped its entire Manufacturing Pathways based on input from over 50 area manufacturers who participated in a recent Manufacturing Skill Panel process to identify workforce skill needs.

Lower Columbia also has one component of the Manufacturing Pathway (Manufacturing Occupations & Fundamentals of Manufacturing) that includes Integrated Basic Education and Skills Training (I-BEST), which combines adult education with workforce training. I-BEST provides two instructors who team teach and adds instructional hours to increase the probability of success.

**Special partnerships with high schools and four-year schools:** Lower Columbia currently has Tech Prep agreements in place with area several high school in Machine Technology and Welding. LCC has welding agreements with Castle Rock, Kalama, Kelso, Mark Morris, Toledo, Toutle Lake, Wahkiakum, and Woodland high schools that are articulated with the college; drafting agreements with Kalama, Kelso, Mark Morris, Rainier, and Woodland; and Principles of Technology agreement with Mark Morris. In 2009-10 LCC will develop *programs of study* that are mandated by the Perkins Career & Technical Education Act between articulated high school programs and our manufacturing program, where possible.

The college also sponsors an LCC High School Welding Competition and NSF Summer Institutes in Pulp and Paper Technology to build interest in manufacturing careers among area high school students. Possible areas for future partnerships might include career events, industry tours and an Advanced Manufacturing Summer Institute.

### **Faculty Expertise/Specialized Knowledge/Skills:**

LCC's Industrial Technology Department employs subject matter experts in all specialized fields. Both regular and adjunct faculty members have significant industry experience in their specific fields as well as having reached high academic and teaching milestones. The Department employs professionals in the areas of machining (including computer numerical control), computer-aided manufacturing, process control, industrial electricity, health and safety, industrial maintenance, welding, fabrication, and computer-aided design. Additionally, faculty members are all highly experienced in the technical education of adults and possess a diverse knowledge of the manufacturing-related fields.

### **Specialized Facilities/Equipment:**

LCC has several facilities supporting manufacturing programs, including a machine shop, welding and fabrication shop, computer aided design lab, electrical lab, process control laboratory, and a diesel/heavy equipment shop equipped with hydraulics training equipment.

The machine shop is fully equipped with both conventional and CNC equipment. A coordinate measuring machine and CNC programming stations are also available for students. LCC's computer aided design lab features 24 computer stations utilizing AutoCAD, OneCNC, and other software that allows students to design an item, produce a drawing, program and simulate machining, and transfer the digital programming data to either a 3-D rapid prototyping printer or a CNC machine tool. Digital design data can then be transferred to the coordinate measuring machine to confirm dimensions and tolerances.

The LCC process control laboratory has two pilot plant lines utilizing industry standard devices and control equipment. With these lines, students can learn about controlling temperature, flow rate, pressure, tank levels, and other measures associated with running automated processes. The lines are fully automated and simulate the type of control room/process line that would be found in industry. Students can work in teams, with some students monitoring process data via computer, and other students making adjustments and repairs.

Additionally, flexible lab facilities and equipment are available for periodic courses such as programmable logic controllers, industrial maintenance training, and materials science.

## **Contract Training Capabilities:**

<http://lowercolumbia.edu/biz/for-employers/>

Lower Columbia College offers a variety of services supporting workforce development and customized training. Working with area business, industries, and agencies, LCC offers job analysis/profiling, assessment and training with direct information regarding the skills needed to succeed in various jobs. Short-term and online classes and seminars are available.

LCC has provided customized training in many areas: computer skills upgrade, maintenance technology, glass technology, leadership development, team building, and specialty classes developed with expertise from industry, e.g. Steam Recovery, Kaymer Digester, Wet End Chemistry.

LCC faculty and staff can customize training to meet your need in areas like:

- Manufacturing
- Industrial Maintenance Technology
- Business Administration
- Computer Skills
- Health Care
- Web Design
- Language and Math Skills
- Diesel and Automotive Technology
- Retail Management

Additionally, LCC works with employers to review existing courses to build a corporate certificate with the elements specific to their business needs and culture.