MANUFACTURING-RELATED PROGRAMS AND SERVICES

Community College: Clackamas Community College (CCC)

General College Description: Clackamas Community College is a comprehensive community college offering a full range of programs, including career technical, college transfer, literacy/ basic skills, community education and business training, at its main campus in Oregon City as well as its Harmony campus in Milwaukee and its training center in Wilsonville. CCC has a particularly strong commitment to career technical education, offering less-than-one year and one-year Certificate of Completion and two-year Associate of Science Degree Programs in 32 program areas and 50 career technical areas. In 2007-08, approximately 9,000 students were enrolled in career technical programs, and 45% of students graduated with career technical degrees and/or certificates. See www.clackamas.edu/index.aspx

Manufacturing-Related Program Areas: The Manufacturing Technology Department at Clackamas Community College offers a range of manufacturing-related programs in several critical, high-demand areas and enrolls approximately 3,325 students annually. The Department's mission is to provide students with the skills and knowledge necessary to succeed in today's high-tech industries and currently offers several certificate and degree programs to meet the varied needs of both students and industry. Click on the links below to learn more:

- Electronics & Micro-Electronics System Technology: http://depts.clackamas.edu/mfg/electronics.htm
- Manufacturing Technology (Machining, CNC, and CAD/CAM): http://depts.clackamas.edu/mfg/manufacturing.htm
- Welding Technology: http://depts.clackamas.edu/mfg/welding.htm

Clackamas also offers registered apprenticeship training in Industrial Mechanic and Maintenance Technician, as well as Employment Skills Training in manufacturing, which is an individualized learning plan that combines college courses with specific hands-on instruction at a local employer to improve employability. In addition to preparing a person for employment the individualized EST plan guides the student in gaining more education and training which develops the student's career path. The program is open entry/open exit, allowing students to begin any term.

Clackamas has also developed numerous career pathways in manufacturing that show various occupations and the programs/courses an individual would take to move to progressively higher employment levels. Also included are career pathway visuals and typical wages and employment projections for high demand occupations. Check out the manufacturing pathways at: http://www2.clackamas.edu/pathways/pathway.asp?pathwayID=6

Special partnerships with high schools and four-year schools: Clackamas is committed to developing partnerships and articulation agreements with area high schools and the Oregon Institute of Technology (OIT) to ensure seamless programs of study of area students:

- Oregon City High School – national Project Lead the Way curriculum utilized in four Manufacturing Engineering Technology classes (Principles of Engineering, Introduction to Engineering Design, Digital Electronics, and Computer Integrated Manufacturing).

- Advanced College Credit: Several dual credit courses offered each term to area high schools include Machining Fundamentals and Welding.

- Gladstone High School – CCC/OIT partnership. Students may begin work toward their AAS in Manufacturing, Renewable Energy or Electronics for an eventual seamless transfer to OIT from CCC.

- CCC/OIT Articulation: Electronics Systems Technology, Microelectronics Systems Technology, & Manufacturing Engineering

- CCC/Columbia Gorge Community College Articulation: Renewable Energy Technology

Faculty Expertise/Specialized Knowledge/Skills: The Manufacturing 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 and computer numerical control, computer-aided manufacturing, industrial design, electrical and manufacturing engineering, metrology, industrial automation, health and safety, industrial maintenance and computer-aided design. Additionally, faculty members are all highly experienced in the technical education of adults and posses a diverse knowledge of the manufacturing-related fields.

Specialized Facilities/Equipment: The manufacturing-related facilities at CCC consist of a very large and modern CNC and conventional machine shop. The inventory consists of over forty conventional and seven CNC machine tools. There are ten classrooms of which six are equipped as computer labs that are always up to technical standards for high-end CAD/CAM software. The Department maintains software licenses to Mastercam, Solidworks, Visual Studio, Autodesk Inventor, MS Office, Digisim and a host of smaller specialized packages. Most classrooms are equipped with video projectors and document cameras.

The college also maintains an electronics engineering technology laboratory outfitted with all the requisite instruments for teaching electrical fundamentals through digital circuits and semiconductor manufacturing. Additionally, flexible lab facilities and equipment are available for periodic courses such as programmable logic controllers, industrial controls, fluid power, materials science and composites manufacturing.

Contract Training Capabilities: Manufacturing is a targeted industry for the CCC Customized Training Department. The success of CCC Customized Training is based on establishing and maintaining long term relationships with clients, organizations, external and internal partners.

The Clackamas process includes: (1) Identification of employer needs; (2) Linkage to necessary resources; (3) Workplace delivery of training, saving employee time and travel costs; (4) Wide variety of training delivery methods, including: class room, lab/lecture, on-line, open-entry/

open-exit/modularized/competency based, etc.; (5) Flexible scheduling; (6) College credit offered for 95% of Customized Training programs, which employers like because training is part of a career pathway and/or certificate/degree program.

Other services include: Human Resource Development and Consulting, Train-The-Trainer, Workplace Basics/Assessment Services, Facilitation Services and Grant Writing Assistance. To view the Customized Training homepage for a complete overview of their programs and services, go to: http://depts.clackamas.edu/ctds

Examples of contracted training and services that have or are being delivered training to the manufacturing industry in collaboration with the CCC Career and Technical Division include an impressive range of over 110 specific, technical training areas. Examples include: Applied Geometric Dimensioning and Tolerancing; Boilers & Heating Systems; CNC Trouble Shooting; Composites Fabrication; Industrial Safety and OSHA; Introduction to Instrumentation for Operators; Materials Science and Practical Metallurgy; and many others. To view the entire list of customized training options for manufacturing, see: http://depts.clackamas.edu/ctds/Manufacturing.htm