Massachusetts Community Colleges

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Level 2 Entry Level Manufacturing Employee Program + Paper Course

Description

115 hour program covers skills needed in an Entry Level Manufacturing position.
Follows Massachusetts' MACWIC Level 2 model.
MACWIC (Manufacturing Advancement Center Workforce Innovation Collaborative)
Covers:
- Introduction to Lean Manufacturing and Problem Solving
- Introduction to CNC Milling Concept and Hands on Training
- Introduction to CNC Turning Concepts and Hands On Training
- Introduction to Programming and GD&T
- Introduction to Paper Technology

Resources

DOC | 59 KB | DOWNLOAD (HTTP://OERMACC.EDC.ORG/SITES/OERMACC.EDC.ORG/FILES/RESOURCES/MANUFACTURING%20COURSE%20LEVEL%20II%20WITH%20PAPER%20COURSE_0.DOC)

Industry:
Advanced Manufacturing (/taxonomy/term/14)

Program Area:
Non credit certification or work force training (/taxonomy/term/40)

Type:
Program brochure/flyer (/type/program-brochureflyer)

Audience:
Instructor (/taxonomy/term/18)

Campus or Organization:
Berkshire Community College (/taxonomy/term/21)

BERKSHIRE COMMUNITY COLLEGE

1350 West Street • Pittsfield, Massachusetts 01201 •
413-499-4660 • www.berkshirecc.edu

Level 2 Entry Level Manufacturing Employee Program

Non-Credit 115 hour program

Students should have completed BCC's Level 1 Entry Level Manufacturing Employee Program or have at least 1 year of experience working in manufacturing.

This program will prepare students in manufacturing foundational skills and exposure to both the plastic and paper industry. Students that successfully complete this program will be able to enter the workforce with a strong knowledge of basic manufacturing concepts and skill sets. Industry leaders are actively seeking a workforce with this background.

The curriculum follows standards required for statewide recognized MACWIC Level 2 Entry Level credentialing.

Introduction to Lean Manufacturing and Problem Solving 16 hrs

This course focuses on entry-level knowledge of the Lean Manufacturing methodology and includes the fundamentals of Six Sigma. It familiarizes students with the fundamental philosophy of Lean Manufacturing and provides them with the tools that enable the identification, measurement, and elimination of non-value-added activities in a manufacturing setting. Students gain the understanding that Lean Manufacturing maximizes product profit, has a positive effect on product quality, and reduces overhead costs. Students develop a working knowledge of the best practices in quality and process management.

Introduction to CNC Milling Concepts and Hands on Training 34 hrs

The CNC Milling Technology module introduces students to the fundamentals of CNC (Computer Numerical Control) milling. Students learn the fundamentals of CNC milling by working with industrial-based equipment to accurately machine a series of complex parts. Students observe and experience CNC's superiority over time-consuming, less accurate, manually controlled machine tools. Activities challenge students to develop and edit programs, and machine assorted parts. Students gain hands-on experience in proper machine set up, cutting tool selection, tool path simulation and machining center operation. Students design solutions for industrial CNC milling applications with an emphasis on real industrial concerns, such as optimized programming, accurate milling and increased productivity.

Introduction to CNC Turning Concepts and Hands on Training 34 hrs

This module introduces the student to the use of ProTurn 9000. The basic concepts of CAM (Computer Aided Manufacturing) are introduced and developed. CAD (Computer Aided Drawing) functions are reviewed, enabling the student to create 2D part drawings.

The student masters the software through a series of projects. Each project teaches, with increasing complexity, job setup, drawing construction, tool path generation, tool path verification and NC code generation. The projects introduce all of the commonly used tool path parameters that can be set. Students also learn how to specify customized cutting tools.

Students create facing, roughing, finishing, drilling, grooving, parting and threading tool paths. Tool paths are verified using the Verify and Backplot animations. Students learn how to generate and save NC code.

Introduction to Programming and GD&T 16 hrs

Students are introduced to part programming for computer numerical control files. Students will verify programs that are written to analyze if the program is correct. Students will also troubleshoot CNC programs. Students will also be introduced to the basics of geometric dimensioning and tolerancing (GD&T). Geometric dimensioning and tolerancing (GD&T) is a system for defining and communicating engineering tolerances. It uses a symbolic language on engineering drawings and computer-generated three-dimensional solid models that explicitly describes nominal geometry and its allowable variation.

Introduction to Paper Technology 15 hrs

On Site Visits and Exposure to Career Opportunities

The Paper Technology training module will introduce the students to the Paper Industry as a career option. Students will learn about the various segments of the Paper making process, including the preparation and treatment of raw materials, Paper Machine components and Thick Stock systems, the chemistry of making paper, sheet forming, pressing and drying. Students will see how these systems are controlled by computer through a Distributive Control System. Students will also learn about the different career options within the Paper industry. Some classes will be held on site at Onyx Specialty Papers in Lee and Crane in Dalton. Students can see the various processes in person and be able to meet people working in the industry. This class will strive to be interactive with a combination of classroom and hands on training. Once completed the students will have a basic understanding of how paper is made and a baseline of knowledge about the industry that will help make the students more attractive to local employers.

Upon completion, students will sit for the MACWIC Level 2 Credentialing Exam.

For more Information Contact Beth Lapierre 413-236-5251 elapierr@berkshirecc.edu

This work was developed by Berkshire Community College through the Massachusetts Community Colleges and Workforce Development Transformation Agenda (MCCWDTA) http://www.masscc.org/mccwdta/.

"This workforce solution is 100% funded by a grant awarded by the U.S. Department of Labor, Employment and Training Administration, TAACCCT grant agreement # TC-22505-11-60-A-25.The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. Massachusetts Community Colleges are equal opportunity employers. Adaptive equipment available upon request for persons with disabilities."

Lvl 2 MEP B.C.C.

SME Name
SME Email Address
SME Phone Number
Name of Material Reviewed

Syllabus, Course and/or Module Evaluation Rubric

1: Evident; 0: Not Evident; N/A = Not applicable

A. Syllabus

A1	Syllabus includes basic elements of the course (e.g., course title, credits, goals/objectives, learning outcomes, pre-requisites, course description)	0	1	N/A
A2	Course outcomes are clearly stated and aligned to occupational focus and industry standards.	0	1	N/A
A3	Course texts (required and optional) are listed on syllabus; supplementary materials and resources are provided if appropriate.	0	1	N/A
A4	Evidence of capstone assessment (licensure, industry certification, capstone project or TSA)	0	1	N/A
A5	Assessment methods, grading policies and scale, and/or other student measurement practices are described within the syllabus.	0	1	N/A
A6	The Course Outline/Schedule includes major topics, and activities.	0	1	N/A

Comments:

no syllabus

1: Evident; 0: Not Evident; N/A = Not applicable

B. Learner Objectives & Interaction

B1	The course learning objectives are measurable.	0	1	N/A
B2	Learning objectives are stated clearly and easily understood from the student's perspective.	0	1	N/A
B3	The learning objectives are appropriately designed for the level of the course.	0	1	N/A

LVL 2 MEP B.C.C.

Comments:

1: Evident; 0: Not Evident; N/A = Not applicable

C. Instructional Design

C1	The course organization and design is clear, coherent, and structured in an appropriate way.	0	1	N/A
C2	Concepts and skills build logically and purposefully throughout the course, with transitions to support development and understanding from skill to skill.	0	1	N/A

Comments:

need more info

1: Evident; 0: Not Evident; N/A = Not applicable

D. Instructional Materials

Specify which module or lab reviewed

D1	The instuctional materials contribute to the achievement of the stated course objectives.	0	1	N/A
D2	The materials meet/reflect current industry practices and standards.	0	1	N/A
D3	The instructional materials are current.	0	1	N/A
D4	The learning activities and/or labs promote the achievement of the stated learning objectives.	0	1	N/A
D5	Learning activities and/or labs provide opportunities for interaction that support active learning.	0	1	N/A
D6	The module design organizes the course into stages of introduction, development, and assessment.	0	1	N/A
D7	The module includes learning objectives, activities, and all classroom materials for each session.	0	1	N/A

Comments:

no material

Lvl 2 MEP B.C.C.

1: Evident; 0: Not Evident; N/A = Not applicable				
E. Assessment & Measurement				
E1	The types of assessments selected measure the stated learning objectives and are consistent with module activities and resources.	0	1	N/A
E2	The assessment instruments selected are varied and appropriate to the student work being assessed.	0	1	N/A

Comments:

need more info

1: Evident; 0: Not Evident; N/A = Not applicable				
F. Innovative or Enhanced Strategies				
F1	Program/course/module reflects design or strategies that accelerate the time to completion.	0	1	N/A
	Program/course/module design or enhancements increase accessibility for lower-skilled students (e.g. those assessed at "pre-college" levels for English or math).	0	1	N/A
F2	Program/course/module design or enhancements are designed to improve retention and completion for adult learners. support the adult learner.	0	1	N/A
	TOTAL	0		

Is this program, course or module foundational, intermediate or advanced in terms of preparing students for employment in the specified industry? Please elaborate.

Another strong program by B.C.C.
Contains skills needed for employment.

Overall Comments:

Couse descriptions clear but need more info like syllabi and supporting material