



Program Overview

MoSTEMWINS Program Name: **MSSC Certified Production Technician (CPT)**

CIP Code: 15.0503

Instructional Hours: 12 credit hours

Length of Program: varies

Delivery methods: hybrid (online & lecture)

Certifications available: MSSC Safety, OSHA 10 hour General Industry, MSSC Maintenance Awareness, MSSC Quality, MSSC Mfg. Production & Processes, and MSSC Certified Production Technician (CPT) Certificate, National Career Readiness Certificate

Development of program: As part of our previous MoManufacturingWINS training program, NCMC developed a 16 credit hour Manufacturing Skills certificate. It included four courses (12 credit hours) related to Manufacturing Skill Standards Council content, an applied technical math course, and a career development course. This certificate program provided an accelerated technical training program which could be delivered in one semester (16 weeks) for full-time students. As our focused MoManufacturingWINS program began to conclude, we noticed that area manufacturers seemed interested in the Manufacturing Skills certificate, including the industry-recognized CPT credentials, for their incumbent worker training.

As CPT awareness and interest increased locally and area as employers began to ask for on-site CPT training, we elected to advance the specific CPT related courses as part of our MoSTEMWINS programming. We chose to enhance these courses by making curriculum adjustments/additions based on company needs, addition of specific content as requested, flexible course scheduling, credit for prior learning, and customized delivery methods including not-for-credit options. In other words, we made a targeted effort to be responsive to industry training needs and adjusted our courses to their work schedules and locations while providing college credit and certificate opportunities to their employees/our students.

By offering on-site industry courses outside a typical semester based schedule as needed and utilizing credit for prior learning, we have the ability to offer the CPT certification as an accelerated program. Students then have the option to complete the two remaining courses to earn the full Manufacturing Skills certificate. All four CPT courses are taught by a full-time NCMC faculty member who is a retired manufacturing engineer with 34 years of industrial experience in manufacturing and distribution facilities. His formal education includes a BS in

Mechanical Engineering and an MS in Engineering Management. After joining our college, he became a certified MSSC CPT instructor. A full listing of CPT course descriptions is provided below.

Challenges encountered to date: While certificate acceleration is one of our basic MoSTEM goals, it is not easily achieved with working employees who may only be able to take one course at a time or as a result of employers allowing limited time/scheduling for on-site course delivery. In response, we have utilized NCMC's Credit for Prior Learning (CPL) approach to achieve useful course-time compression. However, the college's CPL policy limits the amount of CPL credit that may be applied toward a certificate. As a result, we attempt to balance this restriction and employer needs by aligning some course delivery to a traditional academic calendar. While full-time NCMC students can complete multiple, on-campus courses in a single semester, our incumbent worker students are best served by delivering on-site outreach classes which can slow the concept of certificate acceleration.

Experience has shown that non-traditional and even incumbent worker students have a challenges with computer skills and basic study skills can vary widely. Early in a course, the instructor must provide concentrated effort, and identify additional resources as necessary, to bring students capabilities up to a functional level to help ensure success with our hybrid courses. Fortunately, the MSSC online curriculum is very user-friendly.

Current status and plans: One observation from the initial MoManufacturingWINs delivery of the CPT courses was that students with previous manufacturing experience or incumbent manufacturing-related workers had the most success in the four MSSC based courses. This opinion has held true for our MoSTEMWINs effort. Employer demand for on-site delivery has been strong during MoSTEMWINs and student success has been high. We completed one round of CPT courses, including the two additional certificate courses, at one manufacturer and that employer is now asking for another set of courses. Additionally, a regional economic development agency asked us to locally deliver the courses to a consortium of manufacturers based on their stated need for training. While that initiative is still in the early stages, feedback has been positive and plans are underway to offer a concurrent set of courses to benefit night-shift workers.

After the MoSTEMWINs effort formally ends, we anticipate continuing to offer the Manufacturing Skills certificate and the customized CPT course delivery. The hybrid courses seem to be a convenient delivery method to traditional and non-traditional students, the courses offer industry credentials along the way toward the college certificate, and many of the program courses are good substitutes for courses in related degrees and programs. We anticipate employers will continue to embrace the MSSC CPT credential as well as the flexibility we offer to employers and the willingness we offer to provide credit and college opportunities to their workers/our students.

Certified Production Technician (CPT) Course Descriptions:

MF 150 Principles of Safety - 3 credits

This course provides students the basic knowledge of OSHA safety requirements and the skills required to ensure a safe and healthy workplace. Students will develop an understanding of safety concerns, issues, and compliance in a work environment. The course also provides an introduction to manufacturing, customer communication skills, high performance production teams and work-readiness skills. This course meets the safety pre-requisite as part of the Wind program. A Manufacturing Skills Standards Council certificate will be provided pending a successful final assessment of this course. The industry-recognized MSSC-Certified Production Technician certification requires successful completion of all four modules and the final assessment.

MF 155 Principles of Maintenance Awareness - 3 credits

This on-line course provides insights into the basics of good maintenance practices for manufacturing. Students will also develop an understanding of electrical, mechanical and fluid power systems. This course is not a maintenance training course, but rather targets production workers who want to excel in a high-performance manufacturing setting. A Manufacturing Skills Standards Council certificate will be provided pending a successful final assessment of this course. The industry-recognized MSSC-Certified Production Technician certification requires successful completion of all four modules and the final assessment.

MF 160 Principles of Quality Practices - 3 credits

This course provides knowledge and skills related to effective quality systems used in today's manufacturing industry. Students will develop an understanding of quality philosophy, practices, and methods as well as quality audits, tools, and blueprint reading. Manufacturing Skills Standards Council certificate will be provided pending a successful final assessment of this course. The industry-recognized MSSC-Certified Production Technician certification requires successful completion of all four modules and the final assessment.

MF 165 Principles of Manufacturing Processes and Production - 3 credits

This course provides students a broad understanding of manufacturing sub-industries and their related products, processes, challenges and best practices. Students will develop an understanding of common production principles, processes and practices, as well inventory management, packaging, and distribution. A Manufacturing Skills Standards Council certificate will be provided pending a successful final assessment of this course. The industry-recognized MSSC-Certified Production Technician certification requires successful completion of all four modules and the final assessment.

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