

# Issue BRIEF

## Meeting Student Needs through Flexible Delivery Systems: Michigan's M-CAM Experience



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### ABOUT THIS PROJECT

*The lessons in this brief are drawn from Social Policy Research Associates' (SPR's) evaluation of the Michigan Coalition for Advanced Manufacturing (M-CAM) TAACCCT grant. M-CAM is a coalition of eight community colleges in Michigan that used grant funds to strengthen four career pathways—Welding/Fabrication, Production, Multi-Skilled/Mechatronics, and CNC Machining.*



### ABOUT THE TAACCCT GRANTS

*The Trade Adjustment Assistance Community College and Career Training (TAACCCT) grants were funded by the U.S. Department of Labor, Employment and Training Administration. TAACCCT funding assists community colleges in expanding and improving training programs that can be completed in two years or less for high-demand, high-skilled occupations.*

Community colleges play a critical role in helping students learn the skills they need for good jobs. By tracking labor market needs and engaging with local employers, colleges strive to provide industry with skilled workers who can make immediate contributions to the workplace. In recent years, industry needs have shifted more frequently, and workers must upgrade their skills more often. Employers and students increasingly place premiums on speed and flexibility, challenging long-standing college instructional practices. Colleges are adopting a variety of approaches to respond to these needs.

The academic calendar for a typical community college comprises two semesters, usually running for 18 weeks each. Most courses are offered Monday through Friday, with reduced offerings during the summer. This schedule is difficult to accommodate for many students, particularly students with jobs or family responsibilities, recently dislocated workers, and veterans, who return from active duty at various times throughout the calendar year.

To address this issue, colleges are offering more flexible options including open entry program enrollment, more frequent course offerings that span evenings and weekends, and hybrid delivery systems that combined online and in-person instruction. This brief highlights the approaches of three colleges in Michigan, with a focus on the challenges and lessons learned in instituting these new training delivery approaches.

### WHAT WE LEARNED

- Employers and students value having flexible delivery systems that provide students with frequent enrollment cycles or open entry enrollment periods. Adult students, especially at-risk adults, need manageable college workloads and flexible scheduling options to maximize their potential for educational attainment.
- Offering flexibility in course selection and delivery requires significant collaboration from college administrators and instructors, to be able to offer training during nontraditional hours (e.g., evenings, summers), and often requires major changes to learning management systems, to allow students to access content electronically.
- Employers value hands-on learning components of advanced manufacturing programs, so flexibility in lab instruction is also important.
- Institutional or faculty resistance to flexible delivery systems can be best addressed by framing the conversation around effective student success models that lead to improved educational attainment for students.

## A Time-Tested Model: Kellogg Community College

*“The open enrollment is very helpful for family and to work around a busy schedule, or just come in and be able to train in a certain segment [module] of something that you’re lacking [instead of taking an entire course]. ... It’s amazing. Not very many schools have that.*

*M-CAM student*

For over 20 years, Kellogg Community College (Kellogg) in Battle Creek, MI has offered its industrial trades programs using a flexible design. The programs are open entry, providing students with the option to enroll in a module at any time during the calendar year, and giving them up to twelve months from the date of enrollment to complete their training module(s). Kellogg’s industrial trades programs provide students with a self-paced learning environment in which they receive individualized instruction using a modularized, competency-based technical training approach (See Features of Kellogg’s Open Entry Approach). This approach allows the college to better accommodate adult learners who also work, sustain the enrollment numbers required to maintain the programs, and expand and contract quickly when large-scale shifts in industry occur. About 70 percent of Kellogg’s students receive funding to attend college from their employers. Under M-CAM, Kellogg hosted tours and shared its flexible delivery model with other consortium colleges, prompting some colleges to develop their own flexible delivery approaches.

### A Focus on Flexibility: Lansing Community College

As part of its new noncredit and credit Mechatronics program offerings, Lansing Community College (Lansing) decided to test several approaches designed to enhance program flexibility for their students.

- **Adjusting the timing and duration of training.** M-CAM was the college’s “first serious opportunity to try a different delivery system,” stated the program director. Administrators, faculty, and staff within Lansing’s advanced manufacturing training programs were motivated to address urgent industry needs by shortening the time it takes students to complete both noncredit and credit training programs. Enrollment in the college’s Mechatronics training program now occurs monthly, rather than by semester, which means students have additional opportunities to enroll in training and complete course content. This

#### Features of Kellogg’s Open Entry Approach

- **Competency-based modules.** Courses are topical and short, generally 5–25 clock hours in length. In most programs, modules must be taken in a fixed order and students must receive a specific competency level before advancing to the next module.
- **Individualized instruction.** Modules are instructor-facilitated, rather than instructor-led. Students have a list of learning activities (e.g., reading technical manuals or textbooks, watching videos, completing online curricula, viewing presentations, completing written exercises, completing hands-on learning activities, and completing assessments). Instructors are available to address questions and to assist with hands-on learning exercises.
- **Self-paced learning.** Programs allow students to enroll at any time during the year and to complete the program at any time up to one year from date of enrollment. All modules are self-paced. Kellogg’s industrial training facility is staffed by instructors during the day and evening hours throughout the year (8 a.m. to 8 p.m., Mon to Thurs) and training content is available through the college’s online learning management system. Students may attend at any time during these hours to work on course content and hands-on learning activities.
- **Credit-based approach.** Completion of Kellogg’s modules allows students to earn fractionalized credit hours; 24 hours of instruction is equal to one credit hour. Training modules can be “stacked” (aggregated) to earn a certificate or AAS and the amount of credit and contact hours varies by program. Students are also granted credit for prior learning or work experience.

approach also provides employers with a steady stream of qualified, trained applicants to fill open positions.

- ***Adopting a hybrid (online/in-person) format.*** Prior to M-CAM, most of Lansing’s advanced manufacturing training programs were conducted using traditional, lecture-based, classroom-centered training. With M-CAM support, the college purchased an AMTEC simulation system that gave the college online learning content for its new mechatronics program.<sup>1</sup> M-CAM funding also provided funding for faculty to develop new online course content specific to employers’ training needs and to launch a new (online) community of practice forum where students could engage with their peers, faculty, and industry experts to ask questions and receive feedback.
- ***Creating a flexible manufacturing lab.*** The new lab allowed Mechatronics students to complete lab hours on a drop-in basis throughout the week with the support of an instructor “coach” who helped them master hands-on learning content.
- ***Breaking training into smaller, sequenced modules.*** Lansing’s curriculum designer and faculty worked collaboratively to identify three levels of Mechatronics training (Levels 1 through 3) that are competency-based and lead to stacked credentials, including digital badges, industry certifications, certificates of completion, certificate of achievement, and an associate’s degree. This innovative design allowed students to achieve completion milestones more quickly, which provided students with a clear roadmap for pursuing further education, improving their earning potential, and advancing their careers.

*We have great ideas, we are at that point where we are trying to do more with flexible delivery systems but need to change staffing, facilities, and content delivery to maximize our return on investment to institute these changes.*

- Lansing staff

When Lansing launched the redesigned Mechatronics program, only four to five students enrolled, which meant classes were small and provided students with access to individualized instruction. As the program matures, the college will need to monitor growth, upgrade scheduling software, and manage class size to ensure a return on investment for the college.

## Building on Existing Models: Macomb Community College

Macomb Community College (Macomb) was also able to test new approaches under M-CAM, focusing on those that built upon the college’s existing career pathways initiatives.

- ***Reducing duration of training programs.*** Several advanced manufacturing training programs were modified, reducing the program lengths from a full 16-week semester to 8 to 12 weeks depending on the program of study. This helped reduce the time it takes students to complete certificate and degree programs.
- ***Adopting a modularized training approach.*** Macomb created a “3+1 Sequence” where students move through a set of clearly identified credit and skill milestones and are awarded interim credentials for competencies mastered. The curriculum is part of a larger career pathway initiative that includes remedial coursework (if necessary); academic, career, and financial advising; and occupational and career roadmaps.
- ***Incorporating basic skills remediation.*** Macomb contextualized key components of its basic skills training and incorporated it into existing courses, rather than requiring students to attend separate remedial education programs before enrolling in technical, occupational courses.
- ***“Braiding” funding sources to maximize number of students enrolling in courses.*** Macomb moved away from cohort-based training for its workforce development programs and encouraged students from a wide variety of financial aid and workforce training programs—as well as those paying their own tuition—to enroll in their advanced manufacturing courses. This allowed Macomb to offer the courses more frequently because they were no longer tied to one funding stream.

## Addressing Flexible Delivery System Challenges

Community colleges across the country have experienced stagnant enrollment levels for the last several years.<sup>ii</sup> For M-CAM colleges, significant declines occurred from 2011 to 2015, with some colleges experiencing 5 percent declines across their institutions.<sup>iii</sup> This was in part what drove colleges to adopt more flexible scheduling and delivery approaches. But these changes are not easy. During interviews, college administrators, faculty, and staff, pointed to several challenges that must be addressed if community colleges are to embrace the kind of flexibility their industry partners and students need.

- **Regulatory issues.** Flexible delivery systems may require colleges to address regulatory issues to ensure their continued accreditation or eligibility to receive funding—Title IV financial aid, for example. This requires time, diligence, and creative problem solving.
- **Scheduling processes and student information systems.** New terms and schedules for flexible delivery systems must be developed and automated to help students navigate the enrollment, scheduling, and assessment processes. This may require colleges to invest in new data collection systems or staff time to adjust existing systems and test the applications. Constant communication between registrars, faculty, and information technology staff is needed to ensure the changes are implemented properly and tested so that students are enrolled and charged correctly.
- **Appropriate duration for training completion.** College staff stated that “open exit” is not a sustainable flexible delivery system option because colleges are accountable for documenting program completion in order to receive federal and state funds. For this reason, it is imperative that colleges determine what amount of time is needed for students to complete training before colleges mark students as “incomplete” or require students to pay an additional fee to continue.
- **Balance between online learning and in-person, hands-on training.** While many colleges transition to online courses to offer students more flexibility in training delivery, advanced manufacturing employers and faculty stated that hands-on learning must still be a required element of their training programs. Thus, a hybrid approach that combines online learning with in-person, hands-on training using industry equipment was the preferred method for employers and students. The amount of time allotted to these delivery methods, however, will vary depending on the institution and employer base.
- **Remediation and technical skills integration.** Colleges used to provide separate remedial courses that students were required to complete before they could enroll in technical courses, but now courses need to be restructured so that remedial and technical content is delivered in tandem. More colleges are moving to integrate basic skills and technical content within their training programs as part of flexible delivery system design.

## Implications

Community colleges seeking to adopt more flexible approaches can benefit from the lessons learned by M-CAM colleges.

- **Development of flexible delivery systems requires resources.** To adopt flexible delivery systems, community colleges may need to make dramatic changes to course content, physical space, and student data and learning management systems. They may also need to renegotiate faculty agreements to accommodate new design components. M-CAM colleges found that planning and launching these changes required significant time, effort, and additional dollars in the early stages.
- **Training programs need constant refinement.** Industry needs are changing frequently as new technological advancements occur. Colleges may need to invest time and effort more regularly in assessing and refining their training programs to ensure they address changing industry needs. M-CAM colleges learned that at least an annual review of core competencies and student learning objectives, conducted in conjunction with industry and faculty, was a valuable, but labor-intensive, exercise.

- *Faculty dialogues are a key component in creating viable flexible delivery systems.* In some cases, faculty are resistant to working outside of nontraditional hours or are reluctant to make major changes to their existing curriculum. M-CAM colleges found that it was imperative to begin any dialogue about changing delivery methods with faculty discussions that focused on student success models as the foundation—that is, by asking, “What will it take to help our students succeed?” The student success model helps to drive improvements that lead to institutional change.

#### About This Series

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<sup>i</sup> The Automotive Manufacturing Technical Education Collaborative (AMTEC) Manufacturing System Simulator is a machine that provides a training platform for hands-on learning and student instruction. This simulation equipment was specifically designed to support the AMTEC curriculum, which was developed with industry input for use in community and technical college training programs.

<sup>ii</sup> National Student Clearinghouse Research Center, “Term Enrollment Estimates, Fall 2016,” <https://nscresearchcenter.org/wp-content/uploads/CurrentTermEnrollment-Fall2016.pdf>.

<sup>iii</sup> Michigan Community College NETWORK, “Trends in Enrollment,” posted February 5, 2015, Michigan Workforce Development Center, <http://michigancc.net/ccdata/enrollments/trends/Default.aspx>.

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