Bay College

M-CAM Work-Based Learning Inventory & Improvement Template

M-CAM Program	Existing Opportunity	WBL Augmentation/Improvement	Feedback from Students/Employers/Instructors (Mechatronics and Welding only)
	Career Academies A school-within-a-high school model with strong employer partnerships that integrate academics with an occupational curriculum.	N/A	
Welding	Co-Ops Cooperative educational experience.	Boss Snowplow - contract training	
Welding	Incumbent Worker Programs Particularly those that provide training for current low-skilled or low-wage employees that give them access to more advanced positions.	Systems Control – contract training	"In the past year, we have benefited from the state-of-the-art equipment generated through the TAACCCT grant by preparing our current and future workforce with the necessary skills needed to become a proficient welders at Systems Control." –Cole Smith, Human Resources Generalist at Systems Control
Welding	Internships/Externships Paid or other summer or year-round employment opportunities, and paid work experienced	Boss Snowplow - Flex Force Workforce	"Boss Snowplow hires Bay College students as a Flex Force Workforce. This allows students to gain real-life on-the-job welding experience that coincides with their Bay College schedule. Without this flexibility, students would not be able to work and continue their education." -Andrew Paulsen, Bay College Welding Instructor
	Job Shadowing Experiences may occur even prior to training to ensure that the nature of the work and the work environment are a good fit for the prospective trainee.	N/A	
	On-the-Job Training Training conducted by an employer and occurs while an individual is engaged in productive work.	N/A	

Registered Apprenticeship	N/A	
Possibly combined with pre-apprenticeships which are		
"earn while you learn" training models that combine job-		
related technical instruction with structured on-the-job		
learning experiences.		

Identify the program containing the identified WBL opportunity (Machining, Mechatronics, Production, Welding)

Grand Rapids Community CollegeM-CAM Work-Based Learning Inventory & Improvement Template

M-CAM Program	Existing Opportunity	WBL Augmentation/Improvement	Feedback from Students/Employers (Machining and Welding only)
Welding Production	Incumbent Worker Program Particularly those that provide training for current low-skilled or low wage employees that give them access to more advanced positions.	Welding: Because 72% of M-CAM Welding students (both credit and non-credit) are incumbent workers, incumbent worker programs are a huge point of focus. In these programs, Career Coaches provide guidance to incumbent workers about career outlook and balancing current employment with educational training schedules. Job Developers support on the back-end, completing a work-plan with graduating students to help them identify and accomplish their employment goals which consistently involve wage increases and employment related to industry of study. Also, customized training programs through companies like Bosch provide manufacturing students the opportunity to develop skills in welding — including robotic welding — to move into new, advanced positions within their company. Production: GRCC has three M-CAM Production programs: Certified Production Technician, Industrial Sewing, and Manufacturing Readiness. Career Coaches are available to help with the enrollment process and provide guidance on employment outlook postgraduation and relating transferable skills of current employment. When the student is nearing completion, Job Developers complete Work-Plans	"My employer has a program for employees to take welding classes at GRCC so that we gain the skills we need to do welding repair and fabrication. I had a little experience in welding, but my employer being willing to fund this means I can improve my skills at no cost to me. This will allow me to become a fabricator, and help build job security." Kevin, Credit Welding Student
		with the student to identify goals for increasing	

		wages and help connect students with employment opportunities that match those goals, as well as provide job-readiness services to better prepare the student for obtaining that employment. The incumbent worker program for production is similar to that of the welding programs, but is smaller in scale because only 36% of M-CAM Production students are incumbent workers.	
Welding	Internships/Externships Paid or other summer or year-round employment opportunities, and paid work experienced	Welding: Professors and staff from industry use industry connections to coordinate job opportunities for unemployed students in the credit programs, offering students an opportunity to secure a job in the field that works around their current school schedule. Students are given access to Handshake, GRCC's employment system, and offered job leads in their field the week they first enroll in any welding program. Any student considering employment that would conflict with their class schedule are encouraged to first finish their certificate or degree before beginning employment.	"The instructor prints off job postings and places them for everyone in the class to see. Occasionally, will pull me aside to tell me about something specifically relevant to my interests. Then, prior to completing the program, I met with the Job Developer, he helped me with my resume, which was a tremendous help. We completed my workplan and he connected me with Handshake that I can use if I want to look for other jobs." Riley, Non-credit Welding student
Welding Production Machining Mechatronics	Job Shadowing Experiences may occur even prior to training to ensure that the nature of the work and the work environment are a good fit for the prospective trainee.	Welding: Prior to enrolling, interested individuals attending information sessions are given the opportunity to tour the GRCC welding facility and observe other students conduct welding-related tasks. After enrolling, credit and non-credit students participate in industry tours where they are able to see the applications of welding at a local employer and watch welders at those facilities perform the specific aspects of welding that are being taught in their specific class. Production:	"I knew I wanted to study machining, I was told to sign up for an information session. They explained the class well, the Career Coach showed us the machines and told us about what we would learn in class. It helped me understand more about the industry and how the class would impact my career. Once I started, I got pointers from the students who had already been in the program for a couple months. And I learned a lot from watching them do their projects. That really helped me develop."

All three M-CAM Production programs at GRCC are newly developed programs since the implementation of M-CAM. Thus, GRCC was able to allocate extra time for the purpose of job shadowing and site tours in each of these programs. Whereas other programs are already stretched for time, these programs dedicate specific time for the purpose of shadowing individuals in their industry. Manufacturing Readiness students participate in one site visit, Certified Production Technician students participate in 2 site visits, and Industrial Sewing students participate in 4 site visits. The practice or application of their skills are incorporated into the visit when applicable.

Machining:

Students interested in the non-credit CNC/Machining Job Training program first participate in an information session where they are taken on a tour of the GRCC M-TEC machining facility. During this tour, they shadow current machining students and receive a brief lesson on the applications of precision machining. Once in the program, students are often taken on site-visits of hiring-employers, where they see specific applications of machining skills and have an opportunity to speak with machinists currently in the industry. Also during these visits, they have an opportunity to hear about open positions within the company, and hear directly from the hiring-manager what skills are required to fill those positions. Upon completing the program, graduates are often taken on detailed tours of machining shops during jobinterviews in the industry.

Greg, Non-credit CNC/Machining Student.

Mechatronics:

cre em app far top exp per suc	4% of Mechatronics students (both credit and non- redit) are currently employed at intake and most are mployer funded through registered and informal pprenticeship agreements. As such, students are amiliar with the impact of specific mechatronics opics at their place of employment, and have expressed an interest in learning more based on ersonal experiences, shadowing, and testing. As uch, no incorporated employer visit or job- hadowing session is necessary in these programs.	
Welding Production Machining Mechatronics Registered Apprenticeships Possibly combined with pre-apprenticeships which are "earn while you learn" training models that combine job-related technical instruction with structured experiences. Trainer while Sta reg wh eff has in 2 Pro GR Sev op nig	Velding: egistered apprenticeships continue to grow at GRCC. Ithough all apprenticeships are a little different, the vpical apprentice takes 1 class a semester (3-perear), and complete a minimum of 576 instructional ours during their 4-year, 8000 hour apprenticeship. taff have increased recruitment efforts for DOL egistered apprenticeships, reaching out to ompanies by email and phone. The Customize raining department provides information about egistered apprenticeship programs to companies who could benefit from them. As a result of these efforts, the number of registered welding apprentices as more than doubled since M-CAM implementation in 2012. roduction: RCC is working to produce a part-time Industrial ewing course that would allow students the pportunity to work first shift and attend class at ight. This development is the result of feedback from students telling us that working full-time and	"While I was still in the class, the employer I interviewed with was willing to have me come in one day a week so I could begin working while I was still taking the program. Once I finish the program I can begin working there full-time, shadowing an experienced CNC programmer for up to a year. That would allow me to build on the skills I've learned in the class." Andrew, Non-Credit CNC/Machining Student

class, and promote the ability to find employment in the industry before the program has completed.

Currently, no DOL-registered apprenticeship opportunities exist in these GRCC production courses.

Machining:

GRCC provides registered apprenticeship opportunities in Machine Tool / CNC for employers in the West Michigan area. Although each employer's apprenticeship schedule is different, most apprentices receive about 8-hours a week of handson training using M-CAM funded equipment while working at least 4 days a week.

Employers looking to hire current students of the non-credit Job Training CNC/Machining program are encouraged to develop part-time positions that allow students to complete the full-time program of study while gaining applied experience. Demand for these students is high, and we want to increase preapprenticeship opportunities while ensuring that students stay in school long enough to complete their certificate.

Mechatronics:

Mechatronics programs at GRCC are offered in both credit and non-credit formats. 94% of M-CAM Mechatronics students had employment when they started the program. Most of those students are employed in the industry their schools costs are covered by their employer. On the credit side, many students are apprentices in registered DOL

		apprenticeship programs. Through the non-credit Mechatronics MAP program, almost all students are employed and their tuition is paid for by their employer. However, these are not registered apprenticeships and would be considered pre-apprenticeship programs.	
Production Machining	Co-ops Cooperative educational experience	Production: The Pathways to Success in Manufacturing ("CPT") program at GRCC is a result of a partnership with the Federal Probation Court, who identified a need to equip individuals exiting the court system with indemand skills and industry-recognized qualifications. GRCC trains these students in the areas of manufacturing processes, safety, and quality inspection, equipping them with the knowledge they need to pass the MSSC CPT tests in those areas. Additionally, students are provided with employability and job readiness skills, while receiving their OSHAA 30-hour certificate, CPR certificate, Forklift Certificate, and GRCC Certificate of Completion. Meanwhile, the parole office and transitional-housing staff provide specific lessons on best practices for successful re-entry. In the Industrial Sewing program, GRCC has contracted services to the owner of a local sewing company to provide industry expertise for the purposes of curriculum development and classroom instruction. The class is held at this company's facility, housed inside of a local non-profit community-development building.	"I heard about the program through the Hispanic Center. I'm glad I enrolled, it went well. I thought it was beneficial for everyone, especially the students who had lower English abilities. The Literacy Center helped with the English lessons, and those of us who were fluent helped out too, so we moved as a group. As the students learned English, it helped them learn the technical language as well, so they improved in both areas at once. Their English and technical communication skills had direct impact on their ability to learn precise machining For me, I came in not knowing anything, but learned the skills and the technical language to become a machinist. I only wish the program would have been longer." Luis, Contextualized ESL CNC Machining student.

Machining:

As part of contextualized CNC/Machining ESL program, participants from The Hispanic Center of West Michigan attended class at GRCC to learn technical skills in precision machining while receiving ESL lessons from the Literacy Center of West Michigan. This allows Spanish-speaking students the opportunity to acquire an in-demand skill while improving their English by learning technical language and workplace applications.

"One thing that stood out to us during our work on the bilingual CNC/Machining class was how much the staff at M-TEC care about moving people into better employment. They don't just do it because it's their job, but because the entire staff really cares about the people who come into their building. This was evident in every step of developing the class, from the outreach to the instruction to the follow-up after the class finished."

Jennifer Summers – Program Coordinator, Literacy Center of West Michigan

Kellogg Community CollegeM-CAM Work-Based Learning Inventory & Improvement Template

M-CAM Program	Existing Opportunity	WBL Augmentation/Improvement	Feedback from Students/Employers (Machining and Welding only)
Production	WBL Career Academies/ Career Mentoring A school-within-a-high school model with strong employer partnerships that integrates academics with an occupational curriculum.	KCC has recently improved our simulated production line so that it will more closely mirror an actual production line. We would like to improve our program even more by incorporating more employer visits and presentations into our curriculum.	Students have given us positive feedback from the tours we have taken to local manufacturers. We have also had a good experience with having employers present interviewing tips.
Production Welding Machining Mechatronics	Incumbent Worker Program Particularly those that provide training for current low-skilled or low wage employees that give them access to more advanced positions.	The majority of incumbent workers in welding, machining and mechatronics are not low skilled or low wage, however KCC does have many incumbent workers enrolled in those training programs in order to access more advanced positions. Our incumbent workers enrolled in the production programs are the low skilled/low wage employees gaining skills for more advanced positions.	Many of the KCC Advisory Board members send their employees to the RMTC for training. There are also many opportunities for student feedback regarding technology changes or adapting classes. Some of the KCC students are invited to participate on the Advisory Board.
Welding Machining Mechatronics	Co-ops Co-operative educational experience.	To implement a more structured program at KCC that would incorporate a credit based co-op program into the industrial-trades modules, specifically for early college students. A first step	KCC has had employers and students both ask about co-op, internship/externship opportunities. Students would like to get more experience and employers would like to have the

		would be to speak with other M-CAM colleges and look at their models.	opportunity for this training period before hiring an individual on full time.
Welding Mechatronics	Internships/Externships Paid or other summer or year-round employment opportunities, and paid work experienced	To implement a more structured program at KCC that would incorporate a credit based internships/externships into the industrial-trades modules, specifically for early college students. A first step would be to speak with other M-CAM colleges and look at their models. We would also want to include Machining in this category.	KCC has had employers and students both ask about co-op, internship/externship opportunities. Students would like to get more experience and employers would like to have the opportunity for this training period before hiring an individual on full time.
Welding Machining Mechatronics	On-the-Job Training Training conducted by an employer and occurs while an individual is engaged in productive work.	KCC does not have a specific On- the-Job Training program, we use our Incumbent Worker Program as an opportunity to provide the student with on-the-job training.	KCC is not very involved with the On-the-Job Training, the company handles this training.
Welding Machining Mechatronics	Registered Apprenticeships Possibly combined with pre-apprenticeships which are "earn while you learn" training models that combine job-related technical instruction with structured experiences.	KCC works with several employers who are registered with the Department of Labor who refer their employees here for a registered apprenticeship.	The employers reach out to us to set up apprenticeships.

Lake Michigan CollegeM-CAM Work-Based Learning Inventory & Improvement Template

M-CAM Program	Existing Opportunity	WBL Augmentation/Improvement	Feedback from Students/Employers (Machining and Welding only)
Machining	Career Academies A school-within-a-high school model with strong employer partnerships that integrate academics with an occupational curriculum.	ToolingU aligned with college ToolingUInstructor networking	
	Co-Ops Cooperative educational experience.		
Welding Machining Mechatronics	Incumbent Worker Programs Particularly those that provide training for current low-skilled or low-wage employees that give them access to more advanced positions.	 ToolingU More CNC Machining Time (more equipment) Robotic hands on instruction (equipment) AWS certification opportunities Hydraulics labs increased Increased welding practice opportunities/testing 	
Machining Welding	Internships/Externships Paid or other summer or year-round employment opportunities, and paid work experienced	Student, instructor and industry networking	
	Job Shadowing Experiences may occur even prior to training to ensure that the nature of the work and the work environment are a good fit for the prospective trainee.		
Machining	On-the-Job Training	 ToolingU 	

Mechatronics	Training conducted by an employer and occurs while an individual is engaged in productive work.	 Advanced CNC Machining Time (more equipment) Robotic hands on instruction (equipment) Hydraulics labs increased Free ToolingU subscriptions 	
Welding Machining Mechatronics	Registered Apprenticeship Possibly combined with pre-apprenticeships which are "earn while you learn" training models that combine job- related technical instruction with structured on-the-job learning experiences.	 ToolingU Advanced CNC Machining Time (more equipment) Robotic hands on instruction (equipment) Hydraulics labs increased AWS certifications opportunities Free ToolingU subscriptions 	 The training provides us with a broad level of information to help prepare us for our apprenticeship. The fact that it is hands on makes it more beneficial to us. – Max Gedert, Apprentice, Eagle Technology This training program helps by preparing us for what we are going to do on the job. – Mitch Cross, Apprentice, Eagle Technology

List programs that apply to WBL opportunity in column 1 and complete columns 3 and 4.

Lansing Community College

M-CAM Work-Based Learning Inventory & Improvement Template

M-CAM Program	Existing Opportunity	WBL Augmentation/Improvement	Feedback from Students/Employers (Machining and Welding only)
Welding	Career Academies A school-within-a-school mode with strong employer partnerships that integrate academics with occupational curriculum.	Pre-Apprentice program pilot scheduled for Summer 2016	N/A – will be offered Summer 2016
Welding and Production	Incumbent Worker Program Particularly those that provide training for current low-skilled or low wage employees that give them access to more advanced positions.	MIG Welding for GM, Certified Production Technician programs have led to higher skilled positions within companies.	MCAM programs are great. Some employers are thinking about or using CPT and Mechatronics program as incentives for proficiency promotion, pay raise and advancements.
Mechatronics		Mechatronics programs have all given working students the opportunity to advance.	Like the hybrid format and are looking at the different modules and would like to pick out areas of training for their employees from each block.
Welding	Internships/Externships Paid or other summer or year-round employment opportunities, and paid work experienced	Working on improving this system and will be working on connecting Job Developer and Experiential Learning Coordinator together.	Employers want more direction from LCC. LCC strongly encourages paid internships.
Welding Production	On-the-Job Training Training conducted by an employer and	Still working with CAMW on putting together OJT funding	Employers are trying to give LCC students/employees

Mechatronics	occurs while an individual is engaged in productive work.	opportunities for local employers. Manufacturing Exploratory and CPT are possible OJT opportunities.	the experience of being cross trained. A local company (Beckum) only hires student's high school students out of 3 districts. One obstacle has been that some companies will not pay to have apprentices in online classes; however Mechatronics hybrid approach may work — ongoing exploration.
Welding	Registered Apprenticeships Possibly combined with pre-apprenticeships which are "earn while you learn" training models that combine job-related technical instruction with structured experiences.	Increased connections between non-credit and credit programs. Increased connection between Job Developer, Success Coach and Apprentice Coordination at LCC.	LCC had 191 apprenticeships last year, 15 in house. A local company (Demmer) sponsers the registered apprenticeships. This is a great opportunity for the employer to use as a tool to evaluate employees before they enter into their apprenticeship program. It also build company loyalty.
Welding/Production/Mechatronics	Job Shadowing Experiences may occur even prior to training to ensure that the nature of the work and the work environment are a good fit for the prospective trainee.	Have not put into place; will be looking at opportunities within Welding and Production (summer 2016 – fall 2016)	N/A

Macomb Community CollegeM-CAM Work-Based Learning Inventory & Improvement Template

M-CAM Program	Existing Opportunity	WBL Augmentation/Improvement	Feedback from Students/Employers (Machining and Welding only)
Machining	WBL Career Academies/ Career Mentoring A school-within-a-high school model with strong employer partnerships that integrates academics with an occupational curriculum.	Continued (already a component of the MAP+ Apprenticeship Program)	Positive feedback from both Students and Employers has been received
Welding Machining Multi-Skilled Production	Incumbent Worker Program Particularly those that provide training for current low-skilled or low wage employees that give them access to more advanced positions.	Continued working with companies on incumbent training. (Proper-CNC, Lanzen-Welding, Red Viking-Multi-Skilled), Lanzen-Production)	Positive feedback from both Students and Employers has been received
	Co-ops Co-operative educational experience.	None	
Multi-Skilled	Internships/Externships Paid or other summer or year-round employment opportunities, and paid work experienced	Through the TAA; Ford brought one of our students in under their internship program and then hired that student.	
CRT Production	On-the-Job Training Training conducted by an employer and occurs while an individual is engaged in productive work.	OJT in partnership with MiWorks and through the TAA 3 Students were hired at KUKA where their first 6 months would be on-the-job training (3 mo. PLC, 3 mo. Robotics. When complete will be given a raise.)	
Machining Multi-Skilled	Registered Apprenticeships Possibly combined with pre-apprenticeships which are "earn while you learn" training models that combine job- related technical instruction with structured experiences.	Apprenticeships continue through MAP+. Through the TAA two companies have hired a student that they Registered in an Apprenticeship program	Positive feedback from both Students and Employers has been received
Welding Machining Multi-Skilled Production	Job Shadowing Experiences may occur even prior to training to ensure that the nature of work and the work environment are a good fit for the prospective trainee	Continued with scheduling students to visit employers through Day At Work. We have also had Employers visit classrooms	Positive feedback from both Students and Employers has been received

Mott Community CollegeM-CAM Work-Based Learning Inventory & Improvement Template

M-CAM Program	Existing Opportunity	WBL Augmentation/Improvement	Feedback from Students/Employers (Machining and Welding only)
Welding Mechatronics	Internships/Externships Paid or other summer or year-round employment opportunities, and paid work experienced	Currently, we are working with two employers who hire persons upon completion of training and provide something similar to an internship/externship. One of these said employers will hire persons while they are in training to work part time, paid by the employer, to provide them with On the Job experience and allow them the opportunity to apply classroom fundamentals to the work place. The other employer hires persons upon successful completion of training, paid by the employer, and then provides them with additional On Job Training, internally.	Corsair and TDM International offer both summer and year – round paid opportunities.
Welding Machining	Registered Apprenticeships Possibly combined with pre-apprenticeships which are "earn while you learn" training models that combine job- related technical instruction with structured experiences.	Currently, there are registered apprenticeships through Michigan Works! that students in these training programs can participate in, if interested	In Partnership with Genesee/Shiawassee Thumb Michigan Works!, we have been providing Soft Skill training to all recruitment participants entering apprenticeships.
Welding Production Machining	Job Shadowing Experiences may occur even prior to training to ensure that the nature of the work and the work environment	Job Shadowing - Multiple plant tours are done while students are in core training so they can observe	This has been done through partnership with Tribar, Inc., Corsair, and Android Industries.

Mechatronics	are a good fit for the prospective trainee.	industry.	
Machining	Co-Ops Cooperative educational experiences.	We are currently working with on employer who will hire persons while they are in training to work part time, paid by the employer, to provide them with On the Job experience and allow them the opportunity to apply classroom fundamentals to the work place.	Employer partner Tribar has been open and instrumental in providing opportunities for short-term co-ops through a partnership though MEDC and the Community Ventures program (for which MCC serves as the service provider)

Schoolcraft College

M-CAM Work-Based Learning Inventory & Improvement Template

M-CAM Program	Existing Opportunity	WBL Augmentation/Improvement	Feedback from Students/Employers (Machining and Welding only)
Welding	Incumbent Worker Program Particularly those that provide training for current low-skilled or low wage employees that give them access to more advanced positions.	Through the MAM grant, Schoolcraft College has developed and delivered two "boot camp" style short term training sessions:	Welding Basics Training included two incumbent workers from Merit Technologies.

Welding Mechatronics Machining	Internships/Externships Paid or other summer or year-round employment opportunities, and paid work experienced	Schoolcraft College implemented credit internship courses, which are an elective in the AAS program. • MFG 290 – 3 credit hrs. • WELD 290 – 3 credit hrs. Schoolcraft encourages and supports all forms of internships, whether it's for college credit as stated above, or employer sponsored, without a formal tie to the AAS degree. Our main goal is to help students get exposure to a work environment and gain some work experience, while helping employers satisfy employment needs.	
Welding Mechatronics Machining	On-the-Job Training Training conducted by an employer and occurs while an individual is engaged in productive work.	Schoolcraft has not conducted formal OJT, however, are currently exploring OJT with Michigan Works! to pursue opportunities, especially for Boot Camp completers.	
Welding Mechatronics Machining	Registered Apprenticeships Possibly combined with pre-apprenticeships which are "earn while you learn" training models that combine job-related technical instruction with structured experiences.	Welding Pre-Apprenticeship Certificate is a gateway into the Ironworkers Local, reducing completion of Registered Apprenticeship. Schoolcraft has been actively working to promote Registered Apprenticeships with our employers. To-date, we have four US DOL Registered Apprentices with two area companies. We continue to pursue apprenticeship opportunities with area businesses.	

This workforce solution was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The U.S. Department of Labor makes no guarantees, warrantees, 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.

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