Multi-State Advanced Manufacturing Consortium

US DOL SPONSORED TAACCCT GRANT: TC23767

MSAMC Master Performance Based Objectives (PBO) Review Template

Instructions

The following tab lists PBOs for the topic areas *Predictive Maintenance.* Please review each of the PBOs, and rate each PBO with one of the following ratings:

1 = Skill or understanding is required for students.
2 = Skill is useful, but is not crucial for students to know.
3 = Skill is not useful for students, or isn't relevant for typical work assignments.
0 = PBO is unclear.

Additionally, for each PBO please

* Note any comments or recommendations that you may have about how to improve the PBO.
* Indicate whether each PBO is covered in your college's aligned courses, and how (written, lab demo, exercise).

If any PBOs or skill sets seem to be missing from the list, please add them in the space at the bottom of the list.

Please enter your information below	
Name:	
Institution:	
Date:	
Email:	
Phone:	

Predictive Maintenance

M-S AMC Academic Partner PBO Review

Please enter your information below	
Name:	
Institution:	
Date:	
Email:	
Phone:	

Please indicate which course or courses delivered at your institution align with, or cover, the listed objecti		
Aligned Course(s)	1	*Enter course code here*
	2	*Enter course code here*
	3	*Enter course code here*

*** Note**: For each covered PBO, indicate in which of the aligned courses, documented at left, the PBO would be most extensively covered. If there is only one course listed to the left, then you do not have to complete the "Aligned Course" column.

Sub-Topic	Level	Topic	PBO ID	Performance Based Objective (PBO)	Importance, 1 = Need 2 = Nice to have 3 = N/A 0 = Don't understand	Covered - Written Assignment / Reading? Y/N	Covered - Exercise or Assessment? Y/N	Aligned Course *	Comments *Notes to improve the PBO, PBO is unclear, lacking equipment to cover, etc.*
	1	PR	1	Practice advanced predictive maintenance safety by: - Identifying common predictive maintenance safety guidelines - Identifying the potential hazard of pinch points - Explaining the proper procedure for lockout, tagout, and blockout - Identifying the PPE required and/or not appropriate for predictive maintenance - Identifying the potential of burn hazards - Identifying the potential hazards resulting from taking readings while equipment is operating - Demonstrating the proper use of hand tools					
	1	PR	2	Explain vibration analysis by being able to: - Describe the basic concept of vibration analysis - Define the vibration cycle - Define vibration displacement - Define vibration velocity - Define acceleration - Define vibration phase - Describe broadband analysis - Describe narrowband analysis - Describe signature analysis - Explain routes, measurements, and record-keeping - Demonstrate vibration analysis, interpret the results and describe appropriate corrective actions					
	1	PR	3	Explain shaft alignment by: - Describing and demonstrating the basic concepts of shaft alignment - Explaining and demonstrating the process of base preparation and soft foot - Explaining and demonstrating the process of rough alignment - Explaining and demonstrating the process of rim and face - Explaining and demonstrating the process of reverse dial - Describing and demonstrating the technique of laser alignment					
	1	PR	4	Explain balancing by: - Describing the concepts of balancing - Describing static unbalance - Describing uncouple unbalance - Describing quasi-static and dynamic unbalance - Explaining the problems resulting from imbalance - Describing natural frequency - Describing in-place balancing - Describing the operation of a balancing machine - Listing and describing the different equipment used in the balancing process					
	1	PR	5	Describe online and offline motor current analysis by: - Describing and demonstrating the function and use of a motor current analyzer - Explaining the concept of phase orientation - Explaining the concepts of polarization index, rotary influence, dielectric installation, meg test, and step voltage - Interpreting the results and describe the appropriate corrective action					

	1	PR	6	Explain iInfrared thermography by doing the following: - Describe the operation of an infrared thermography camera and equipment - Describe the operation of portable temperature-indicating devices - Describe the operation of stationary temperature-indicating devices - Interpret the results and describe the appropriate corrective action - Demonstrate the process of infrared Thermography and analysis.					
	1	PR	7	Explain ultrasonic analysis by: - Describe the basic concepts of ultrasonic analysis - Describe the different flaws that can be detected by ultrasonic analysis - Demonstrate the application of Ultrasonic Analysis - Interpret the results and describe the appropriate corrective action					
	1	PR	8	Describe maintenance databases by: - Describing the basic function of maintenance logbooks (book or electronic file). - Explaing the concept of a preventive maintenance system - Describing the process of a computerized maintenance management system - Describing the four steps of preventive maintenance - Explaining the concept of a predictive maintenance schedule - Describing the different monitoring types used in predictive maintenance					
	1	PR	9	Describe predictive maintenance troubleshooting basics by doing the following: - Describe the relationship between predictive maintenance and troubleshooting - Explain the concept of troubleshooting - Describe the process of predictive maintenance troubleshooting - Describe the resources available to predictive maintenance troubleshooting - Describe predictive maintenance troubleshooting problems					

Additions: Please add any additional objectives that we may have overlooked.

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