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| **Assurance of Student Learning Report**  **2023-2024** | | |
| *Ogden College of Science and Engineering* | | *School of Engineering and Applied Sciences* |
| *Engineeering Technology Management (5007)* | | |
| *Greg Arbuckle* | | |
| ***Is this an online program***?  Yes  No | Please make sure the Program Learning Outcomes listed match those in CourseLeaf . Indicate verification here  Yes, they match! (If they don’t match, explain on this page under **Assessment Cycle)** | |

**\*\*\* Please include Curriculum Map as part of this document (at the end), NOT as a separate file.**

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| ***Use this page to list learning outcomes, measurements, and summarize results for your program. Detailed information must be completed in the subsequent pages. Add more Outcomes as needed.*** | | | |
| **Program Student Learning Outcome 1:**  Demonstrate the ability to identify, formulate strategies and solve technical problems. | | | |
| **Instrument 1** | Results of ATMAE Certified Technology Management certification exam (process and operations sections). | | |
| **Based on your results, check whether the program met the goal Student Learning Outcome 1.** | | **Met** | **Not Met** |
| **Program Student Learning Outcome 2:**  Demonstrate an ability to communicate effectively in pertinent areas, both written and graphic. | | | |
| **Instrument 1** | Assessment of reports from the capstone course. | | |
| **Based on your results, check whether the program met the goal Student Learning Outcome 2.** | | **Met** | **Not Met** |
| **Program Student Learning Outcome 3:**  Demonstrate the knowledge and capacity to apply managerial/ leadership principles and practices to appropriate situations. | | | |
| **Instrument 1** | Results of ATMAE Certified Technology Management certification exam (leadership and management sections). | | |
| **Based on your results, check whether the program met the goal Student Learning Outcome 3.** | | **Met** | **Not Met** |
| **Assessment Cycle Plan:** | | | |
| Nothing will change in terms of the timeline. | | | |

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| **Program Student Learning Outcome 1** | | | | | |
| **Program Student Learning Outcome** | Demonstrate the ability to identify, formulate strategies and solve technical problems. | | | | |
| **Measurement Instrument 1** | **NOTE: Each student learning outcome should have at least one direct measure of student learning. Indirect measures are not required.**  The graduates from the ETM program are required to take the Certified Technology Manager (CTM) exam offered by the Association of Technology, Management, and Applied Engineering (ATMAE) during their Senior Capstone Course. ATMAE is the accreditation board of the MET program.22 students in the MFGE 490A capstone course took the CMS Exam between April 18 – 24, 2024. The ATMAE’s CTM Exam required the students to answer questions about the program’s core courses. The following categories of the ATMAE’s CTM exam were used to evaluate SLO1: Processes and Operations. | | | | |
| **Criteria for Student Success** | *Faculty have determined that students meet this outcome by passing both sections for this exam. ATMAE has set a passing score of 59.38% for the CTM examination.* | | | | |
| **Program Success Target for this Measurement** | | Passing both technical sections as defined above with a score of 59.38%. | **Percent of Program Achieving Target** | The students averaged:  Processes (61.84%)  Operations (61.55%) | |
| **Methods** | Students regeistered for MFGE 490A in spring 2024 completed the ATMAE CTM Examination as part of their course. The scores are then provided by ATMAE to the faculty which are compiled and averaged for each section. If a given section average is above 59.38% than that section is considered successful. The successful sections are counted to measure if the students met the overall target goal. | | | | |
| **Based on your results, highlight whether the program met the goal Student Learning Outcome 1.** | | | | **Met** | **Not Met** |
| **Results, Conclusion, and Plans for Next Assessment Cycle (Describe what worked, what didn’t, and plan going forward)** | | | | | |
| **Results**:  The faculty were pleased by these results, but there is still improvement to be made. Students passed both sections used to assess SLO 1 surpassing the requirement for this outcome. Overall, 15/22 students (68.18%) of the students passes the exam.  Most of these students have completed the managerial courses within the program instead of electives outside of the School of Engineering and Applied Sciences. We are starting to see those results. The faculty will look at methods of reinforcement of skills throughout the program to assist with increasing scores.  **Plans for Next Assessment Cycle**:   1. We will develop a matrix that shows the learning objectives for each class and record this as a Introductory, Reinforcement, Matery, or Assessment per course. 2. We will identify key learning objectives for a couple of classes for AY24/25 and measure the objectives and put in corrective actions if objectives not met.   We will continue to ask for additional faculty to allow the currently faculty to not have to teach overloads and be able to focus on their classes and in addition be able to split courses that were combined because of lack of faculty. | | | | | |

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| **Program Student Learning Outcome 2** | | | | | |
| **Program Student Learning Outcome** | Demonstrate an ability to communicate effectively in pertinent areas, both written and graphic. | | | | |
| **Measurement Instrument 1** | Final presentations from the MFGE 490 Senior research course.  Presentations will consist of a written report and an oral presentation summary to be delivered online. | | | | |
| **Criteria for Student Success** | Students will submit a professional presentation that explains the results of their research. This should include the impact their work has had or will have on their organization. The presentation should also include various items needed to implement their ideas such as employee training, timeline, cost of the project and expected ROI. As well as any other pertinent information they found as they completed their work. In addition to the written report, students will present an oral summary of their results. The oral summary will be presented in a professional manner consistent with how a presentation would be presented in a professional work environment. | | | | |
| **Program Success Target for this Measurement** | | Seventy percent of students in the course will achieve at least a score of seventy percent or higher on the MFGE 490 final presentation. | **Percent of Program Achieving Target** | 100% | |
| **Methods** | Presentations will be scored using the rubric provided to them. | | | | |
| **Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.** | | | | **Met** | **Not Met** |
| **Results, Conclusion, and Plans for Next Assessment Cycle (Describe what worked, what didn’t, and plan going forward)** | | | | | |
| **Results**: The results for SLO #2 were within the range we had hoped for, and we are meeting our criteria for success.    **Conclusions:** The faculty has been pleased with the outcome of SLO #2 over the last few years. While we will always look for ways to improve all aspects of the program, we do not feel we need to make any changes to how we are performing on SLO#2    **Plans for Next Assessment Cycle**:   We are confident that our current methods are helping us be successful with SLO #2 and will not make changes to this item. | | | | | |

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| **Program Student Learning Outcome 3** | | | | | |
| **Program Student Learning Outcome** | Demonstrate the knowledge and capacity to apply managerial/ leadership principles and practices to appropriate situations. | | | | |
| **Measurement Instrument 1** | **NOTE: Each student learning outcome should have at least one direct measure of student learning . Indirect measures are not required.**  The graduates from the ETM program are required to take the Certified Technology Manager (CTM) exam offered by the Association of Technology, Management, and Applied Engineering (ATMAE) during their Senior Capstone Course. ATMAE is the accreditation board of the MET program.22 students in the MFGE 490A capstone course took the CMS Exam between April 18 – 24, 2024. The ATMAE’s CTM Exam required the students to answer questions about the program’s core courses. The following categories of the ATMAE’s CTM exam were used to evaluate SLO1: Leadership, Self-Management, People, Project, Quality, and Safety | | | | |
| **Criteria for Student Success** | *Faculty have determined that students meet this outcome by passing both sections for this exam. ATMAE has set a passing score of 59.38% for the CTM examination.* | | | | |
| **Program Success Target for this Measurement** | | Passing 5 out 6 sections as defined above with a score of 59.38%. | **Percent of Program Achieving Target**  **50%** | The students averaged:  Leadership (51.14%)  Self-Management (67.67%)  People (65.89%)  Project (53.51%)  Quality (47.31%)  Safety (63.64%) | |
| **Methods** | Students regeistered for MFGE 490A in spring 2024 completed the ATMAE CTM Examination as part of their course. The scores are then provided by ATMAE to the faculty which are compiled and averaged for each section. If a given section average is above 59.38% than that section is considered successful. The successful sections are counted to measure if the students met the overall target goal. | | | | |
| **Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.** | | | | **Met** | **Not Met** |
| **Results, Conclusion, and Plans for Next Assessment Cycle (Describe what worked, what didn’t, and plan going forward)** | | | | | |
| **Results**:  The faculty were pleased by these results, but there is still improvement to be made. Students passed 3 out of 6 sections used to assess SLO 2 not meeting the requirement for this outcome. However, 15/22 students (68.18%) of the students passes the exam.  Most of these students have completed the managerial courses within the program instead of electives outside of the School of Engineering and Applied Sciences. We are starting to see those results. The faculty will look at methods of reinforcement of skills throughout the program to assist with increasing scores.  **Plans for Next Assessment Cycle**:   1. We will develop a matrix that shows the learning objectives for each class and record this as a Introductory, Reinforcement, Matery, or Assessment per course. 2. We will identify key learning objectives for a couple of classes for AY24/25 and measure the objectives and put in corrective actions if objectives not met.   We will continue to ask for additional faculty to allow the currently faculty to not have to teach overloads and be able to focus on their classes and in addition be able to split courses that were combined because of lack of faculty. | | | | | |

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| **Program name:** | Engineering Technology Management | | |  |  |
| **Department:** | SEAS | | |  |  |
| **College:** | OCSE | | |  |  |
| **Contact person:** | Greg Arbuckle | | |  |  |
| **Email:** | [greg.arbuckle@wku.edu](mailto:greg.arbuckle@wku.edu) | | |  |  |
| **KEY:** | |  |  |  |  |
| **I = Introduced** | |  |  |  |  |
| **R = Reinforced/Developed** | |  |  |  |  |
| **M = Mastered** | |  |  |  |  |
| **A = Assessed** | |  |  |  |  |
|  |  |  | **Learning Outcomes** |  |  |
|  |  |  | **LO1:** | **LO2:** | **LO3:** |
|  |  |  | Demonstrate the ability to identify, formulate strategies and solve technical problems. | Demonstrate an ability to communicate effectively in pertinent areas, both written and graphic. | Demonstrate the knowledge and capacity to apply managerial/ leadership principles and practices to appropriate situations. |
| **Course Subject** | **Number** | **Course Title** |  |  |  |
| MFGE | 271 | Industrial Statistics | I |  | I |
| MFGE | 310 | Safety in Industry |  |  | I |
| MFGE | 342 | Manufacturing Operations | R |  | R |
| MFGE | 356 | Systems Design and Operation | R | R | M |
| MFGE | 371 | Quality Assurance | R | R | R |
| MFGE | 390 | Project Management |  | M | M |
| MFGE | 394 | Lean Systems |  | R | M |
| MFGE | 430 | Technology Management/Supervision |  | M | M |
| MFGE | 490B | Senior Research | A | A | A |

MFGE 490A: Spring 2024

Final Presentation on Senior Research

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circle One:

Industry Guest Faculty Member Student

Group Name: **Team 1**

**Overall Communication** (Weak) (Strong)

Clear (Oral) 1 2 3 4 5

Understandable (Written) 1 2 3 4 5

Appropriate Visual Aids 1 2 3 4 5

Organized 1 2 3 4 5

**Problem Identification**

Defined 1 2 3 4 5

Engineering Management

Principles Applied 1 2 3 4 5

Innovation 1 2 3 4 5

**Data Analysis**

Appropriate Tools Applied 1 2 3 4 5

Organization of Analysis 1 2 3 4 5

**Results and Conclusions**

Origin of Findings from

research 1 2 3 4 5

Knowledge used relevant

to discipline1 2 3 4 5

**I**nterpretation of findings1 2 3 4 5

**Teamwork**

Evidence of equal team

participation 1 2 3 4 5

Knowledgeable of topic 1 2 3 4 5

**Overall Evaluation of Presentation** 1 2 3 4 5