UNIVERSITY OF ARKANSAS
PULASKI TECH

Assessment Report: Automated Manufacturing Systems Technology: Program Level

The University of Arkansas – Pulaski Technical College calls for each program (AS, AA, AAS, CP, and TC) to have an assessment plan for each academic year that includes the following:

- **Program learning outcomes**
- **Procedures for assessing the achievement of student learning**
- **Procedures for analyzing and interpreting assessment results for the continuous improvement of the program.**

A primary goal for each instructional department's assessment is to include at least one direct measure of student learning, which is accomplished usually through the use of locally developed tests, student portfolios, capstone assessment measures, embedded assignments, or through licensure exams and standardized national tests. In addition to direct measures, most areas may also use indirect methods to assess student achievement. Graduation rates and graduation and employer surveys are frequently used as indirect indicators of student achievement.

This form presents template of questions that must, at minimum, be addressed by instructional departments when filing an assessment plan. While an electronic version of this form will be made available, instructional departments may include additional information not specifically addressed in this form as long as the template questions are addressed.

Other Assessment Considerations:

- The College expects programs/departments/divisions to make curriculum changes and budget requests based in part upon assessment findings. Assessment of student learning should be a catalyst for quality instruction and improvement across the college community.
- All programs will be asked to submit an annual assessment report to the Assessment Committee by October 10 of each year. (If October 10 falls on a weekend, please submit reports on the following Monday.)
- For technical and occupational programs, please consider the role of your advisory committee in your student learning objectives.

This form must be completed by October 10 of each academic year. Complete each part of this form. Please follow highlighted instructions.

Part A: Identification and Student Learning Outcomes

1. Name of program: *Automated Manufacturing Systems Technology: Automated Processes (AAS)*

2. Name of individual compiling report: *Nicholas C. Speer*

3. Date of submission: *11/1/2021*

4. Academic year: *2020-2021*

5. Is the assessment plan (*Check or highlight one*)

☐ an initial plan for the program ☒ a revision of an old plan ☐ unaltered from previous year

6. Provide a mission statement of the program to include a description of the jobs/careers for which students are being prepared. Also, list the learning outcomes for your program.

Automated Manufacturing Systems Technology (AAS) prepares students to operate and maintain various automated systems common in automated manufacturing environments. Student are equipped to set up, operate, maintain, and in some cases fix CNC machines, robotic systems, and programmable logic controllers. Jobs for which the students can be prepared are CNC machinist, CNC programmer, Manual machinist, Quality Inspector, Manufacturing Manager, Automation Technician, Maintenance Controls Technician, Instrumentation Technician, Mechatronics Technician, Automation Controls Technician.

Program learning outcomes have been updated this year and will be assessed from this point forward

1. Safety in Automated Manufacturing
2. Components of Manufacturing
3. Programming of Automated Manufacturing Systems
4. Implementation of Automated Systems
5. Electricity and Industrial Machine Control

7. Complete the curriculum map below. Please mark an X in the map below to indicate which courses correspond with learning outcomes. If applicable, you can also use I, D, or M to indicate that a learning outcome is introduced, developed to foster more sophistication, or demonstrated at a level of mastery acceptable for graduation within the program. Additional courses may be marked with an R to indicate reinforcement of a program learning outcome.

List all supporting courses	Program Learning Outcomes					
	PLO #1	**PLO #2**	**PLO #3**	**PLO #4**	**PLO #5**	**PLO #6**
Automated Manufacturing Systems I (AMS 1002)				**I**	**I**	
Automated Manufacturing Systems II (AMS 1102)	**D**				**D**	
Automated Manufacturing Systems III (AMS 1202)				**D**		
Automated Manufacturing Systems IV (AMS 1302)				**I**		
CAD/CAM (AMS 2203)		**D**	**D**	**I**		

8. How does your assessment report connect to institutional learning outcomes?

To help with mapping your assessment data to the school's overall institutional outcomes, please check the boxes for the institutional outcomes directly associated with the assessment data presented in this report. For details on each outcome, see Appendix A.

☐ ILO #1 – Information Literacy

☑ILO #2 – Technology Literacy

☑ ILO #3 - Communication

☑ ILO #4 – Critical Thinking

☑ ILO #5 – Quantitative Reasoning

☐ ILO #6 – Cultural Awareness

☑ ILO #7 – Professionalism

Part B: Assessment Methods and Data Sources

In this section of the assessment plan, learning outcomes for the program will be defined. Also, assessment methods and data sources for each outcome must be defined. Follow the instructions below to define and relate the program learning outcomes.

1. Complete the chart below or attach documentation of the assessment process that includes the data included below.

Program Learning Outcomes	Course	Assessment Method and/or Data Source
1. *Safety in Automated Manufacturing*	*AMS 1002*	*Students recognize safety hazards and potential safety issues and apply safe work practices and procedures in accordance with OSHA standards to safely operate and maintain equipment commonly used in an automated manufacturing environment. The assessment will occur in AMS 1002.* *70% of students will average 70% or higher on the module examinations. This course is only offered during the Fall Semester*
2. *Components of Manufacturing*	*AMS 1102*	*All students enrolled in AMS 1102 (Automated Manufacturing Systems II) are required to complete a number of selected modules through Amatrol. The assessment data is based on the results of the tests taken at completion of each module.* *75% of students will score 70% or higher on the module posttests. This course is only offered in the fall semester.*
3. *Programming of Automated Manufacturing Systems*	*AMS 1302* *AMS 2203*	*All students enrolled in AMS 1302 (Automated Manufacturing Systems IV) are required to complete a number of selected modules through Amatrol. The assessment*

		data is based on the results of the tests taken at completion of each module. *75% of students will score 70% or higher on the module posttests. Both courses are only offered in the Spring Semester*
4. Implementation of Automated Systems	*AMS 1003*	*All students enrolled in AMS 1003 (Manufacturing Processes) are required to submit a written composition on an Arkansas manufacturer. The assessment data is based on this composition.* *75% of students will score 70% or higher. This course is only offered during the Spring semester.*
5. Electricity and Industrial Machine Control	*AMS 1202*	*All students enrolled in AMS 1202 (Automated Manufacturing Systems III) are required to complete a number of selected modules through Amatrol. The assessment data is based on the results of the tests taken at completion of each module.* *75% of students will score 70% or higher on the module posttests.*

2. Please check or highlight any of the statements below that apply to your program assessment. Also, for each program outcome, if applicable, attach any assessment instruments, grading rubrics, or exemplars of student performance used at the program level.

   ☐ Rubrics and/or standardized tests were pilot-tested and refined.

   ☑ Rubrics were shared with students.

   ☐ Reviewers were calibrated with high inter-rater reliability or norming workshops.

3. Also discuss any additional data sources that may be used to gauge success (e.g. charts, graphs, surveys, rates).
   N/A

4. Describe the process of analyzing the assessment data, including specifically discussion of results and collaboration among faculty in the program, for the last academic year. Also, check below any of the following statements that apply to your program assessment.

   ☐ Comparative data used when interpreting results and deciding on changes for improvements.

   ☑ National standards, collaboration with sister programs and/or research data were used to ensure the program was held to high standards.

5. Complete the chart below or attach documentation of the assessment results that includes the data included below. Results should include total number of students assessed, the distribution of scores, relevant and detailed interpretation, student strengths and

weaknesses, and whether the target was met.

Program Learning Outcomes	Assessment Results/Conclusion
1. *Safety in Automated Manufacturing*	Assessment goal met. 100% of the safety related modules tests were passed with a score of 70% or higher. No change to the instruction is recommended. This course had an 86% overall average.
2. *Components of Manufacturing*	Assessment goal met. 4 Students were tested over a total of 10 modules each, for a grand total of 40 tests. Five of those test scores were less than the 70% goal. This course had a 91% overall average on all posttests.
3. *Programming of Automated Manufacturing Systems.*	Assessment goal not meet in AMS 1302. This is due to a student taking an incomplete and failing to finish the course. If not due to this said student, 100% of students will score 70% or higher on the module posttests with completed students, this course had an 85% overall average. Assessment goal was meet in AMS 2203. 100% of students scored a 80% or higher on the practical exams.
4. *Implementation of Automated Systems*	These findings will be posted next assessment.
5. *Electricity and Industrial Machine Control*	Assessment goal not meet. This is due to two students taking incompletes and failing to finish the course. If not due to these two students, 100% of students will score 70% of higher on the module posttests with completed students, this course had an 86% overall average

6. Describe your use of results, including planned improvements to the program and/or any follow-up studies that confirmed that changes have improved student learning.

   With this being a hybrid course, I plan on having he students attend class at least for half the scheduled class time to make sure students are completing modules.

7. What specific changes were implemented this year based on last year's results?

   Our biggest area of concern was in the AMS 1, 2, 3, and 4 classes. As a result, students will be given target dates for completing modules rather than simply allowing them to complete the work by the end of the 8 weeks.

8. What specific budgetary resources are needed for your program based on your assessment results?
   N/A

9. Please write any additional information here that you think is pertinent to the assessment process for your program that assists stakeholders (i.e. administrators and standing committees) in understanding your report.

   Most of the courses I teach fall under Machine Tool Technology. Some of these course/modules are related to industrial maintenance, which is not in line of expertise. With these classes being

hybrid, I am more of a moderator. I feel this the AMS program needs to be looked over and revisited to make sure the right instructors are teaching the right curriculum and that all classes are aligned in a degree plan that makes since.

Appendix A – UA-PTC's Institutional Learning Outcomes

1. Analyze information from credible sources. (Information Literacy)

This may include the ability to:

- Locate relevant information
- Evaluate the quality and usefulness of the information
- Synthesize the information.
- Communicate the information in an ethical manner consistent with the standards of the field or program of study.

2. Appropriately apply a variety of technology tools within one's discipline. (Technology Literacy)

This may include the ability to:

- Acquire information,
- Solve real-world problems,
- Communicate, and/or
- Perform tasks and processes.

3. Communicate effectively with diverse audiences in multiple contexts. (Communication)

This may include the ability to:

- Develop, organize, and present orally well-supported and ideas formally and informally with consideration of community and context.
- Develop, organize, and present in written format well-supported ideas formally and informally with consideration of community and context.
- Clearly express ideas, information, and concepts in various modes and media, including the proper use of appropriate technology.
- Select and utilize means of communication appropriate for a variety of professional, civic, and social circumstances, environments, and communities.
- Consider diverse communities in multiple contexts.

4. Apply critical thinking skills to achieve a desired goal. (Critical Thinking)

This may include the ability to:

- Apply appropriate methods to solve problems or address issues.
- Use evidence to justify conclusions.

5. Use quantitative methods to solve problems. (Quantitative Reasoning)

This may include the ability to:

- Analyze and interpret quantitative information.
- Apply quantitative concepts and skills to solve real world problems.

6. Demonstrate awareness of cultural differences. (Cultural Awareness)

This may include the ability to:

- Explain how similar actions can be understood differently depending on cultural context.
- Evaluate the impact of culture on individuals and groups.

7. Demonstrate career readiness skills. (Professionalism)

This may include the ability to:

- Demonstrate personal accountability.
- Meet commitments.
- Demonstrate ethical behavior.

- Demonstrate teamwork.