Program Information Report

Manufacturing & Automotive

Automation Specialist (CVAMSP)

Advanced Certificate

Program Effective Term: Fall 2022

High Demand Occupation High Skill Occupation High Wage Occupation

The Automation Specialist certificate builds on skills obtained in the Robotics Technician certificate for those with the desire to enter the field of automation and robotics. Students will learn how robots are programmed and wired into larger systems. Technicians work in industrial settings to operate, maintain, and program robots.

Students with technology interests who enjoy working with their hands like gaming, manipulating code, robotics, 3D printing are suited for this line of work.

Major/Area Requirements		(19 credits)
ELE 254	Programmable Controllers (PLCs) II	4
MEC 105	Pneumatics and Hydraulics in Fluid Power	4
NCT 100	Foundation Concepts for Manufacturing (CNC)	3
NCT 101	Introduction to Computerized Machining (CNC) - I	2
NCT 110	Introduction to Computerized Machining (CNC) - II	2
ROB 221	Robotics III	4

Minimum Credits Required for the Program: 19

Program Information Report

Science, Computer Technology, Engineering & Math

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Received by C&A 1/25/22

Washtenaw Community College

PROGRAM PROPOSAL FORM

Preliminary Approval – Check here when using this form for preliminary approval of a program proposal, and respond to the items in general terms.

☒ **Final Approval** – Check here when completing this form after the Vice President for Instruction has given preliminary approval to a program proposal. For final approval, complete information must be provided for eachitem.

Program Name:	Automation Specialist	**Program Code:** CVAMSP
Division and Department:	ATP – Advanced Manufacturing	
Type of Award:	☐AA ☐ AS ☐AAS ☐Cert. ☒ Adv. Cert. ☐ Post-Assoc. Cert. ☐Cert. of Comp.	
Effective Term/Year:	Fall 2022	
Initiator:	Allan Coleman	**CIP Code:** 15.0406

Program Features Program's purpose and its goals. Criteria for entry into the program, along with projected enrollment figures. Connection to other WCC programs, as well as accrediting agencies or professional organizations. Special features of the program.	This embedded certificate will allow students to obtain WCC credentials on the way to obtaining an AAS Mechatronics degree. This certificate supplements the skills to those obtained through the robotic technician certificate. There were no certificates specific to automation.
Need Need for the program with evidence to support the stated need.	Our program did not have any robotics certificates other than the AAS. This certificate allows students to obtain more skills with a WCC credential for entering into the field as an automation specialist working on automated systems and robotics.

Program Outcomes/Assessment State the knowledge to be gained, skills to be learned, and attitudes to be developed by students in the program. Include assessment methods that will be used to determine the effectiveness of the program.	Outcomes	Assessment method
	1. **Install and troubleshoot PLC communication.** 2. **Set up and operate lathe and mill machining centers.** 3. **Build a circuit from a schematic.**	1. **Outcome-related departmental exam questions** 2. **Outcome-related projects** 3. **Lab exercise**

Curriculum List the courses in the program as theyshould appear in the catalog. List minimum credits required. Include any notes that should appear below the course list. Associate degree programs mustprovide a semester by semester program layout.	**ROB 221** **Robotics III** **4 credits** **NCT 100** **Fundamentals of Manufacturing (CNC)** **3 credits** **NCT 101** **Introduction to Computerized Machining (CNC) I** **2 credits** **NCT 110** **Introduction to Computerized Machining (CNC) II** **2 credits** **MEC 105** **Fundamentals of Fluid Power** **4 credits** **ELE 254** **Programmable Controllers (PLCs) II** **4 credits** **Total: 19 credits**

Budget

Specify program costs in the followingareas, per academic year:

	START-UP COSTS	ONGOING COSTS
Faculty	$ 0 .	$ 0 .
Training/Travel	.	.
Materials/Resources	.	.
Facilities/Equipment	.	.
Other	.	.
TOTALS	$ 0 .	$ 0 .

Program Description for Catalog and Web site	The automation specialist certificate builds on skills obtained in the robotics technician certificate for those with the desire to enter the field of automation and robotics. Students will learn how robots are programmed and wired into larger systems. Technicians work in industrial settings to operate, maintain, andprogram robots. People who enjoy technology, working with their hands, and manipulating program code are well suited for this career.
Program Information	**Accreditation/Licensure – None required** **Advisors – Niki Lee** **Advisory Committee -** **Admission requirements - None** **Articulation agreements -** **Continuing eligibility requirements -**

Assessment plan:

Program outcomes to be assessed	Assessment tool	When assessment will take place	Courses/other populations	Number students to be assessed

1. Install and troubleshoot PLC communication.	1. Outcome-related departmental exam questions 2. Outcome-related lab quizzes	Fall 2025	ELE 254	All students

2. Set up and operate vertical machining centers and turning centers.	Outcome-related project	Fall 2025	NCT 110	All students
3. Build a circuit from a schematic.	Lab exercise	Fall 2025	MEC 105	All students

Scoring and analysis plan:

1. Indicate how the above assessment(s) will be scored and evaluated (e.g. departmentally-developed rubric, external evaluation, other). Attach the rubric.

   Outcome-related questions on departmental exams will be scored using an answer key.
   Outcome-related lab quizzes will be scored using a rubric.
   Lab exercise and outcome-related projects will be scored using a rubric.

2. Indicate the standard of success to be used for this assessment.
   Outcome #1: 70 % of students will score 70% or higher.
   Outcome #2: 75% of students will score 75% or higher.
   Outcome #3: 70% of the students will score 70% (7 of 10) or higher.

3. Indicate who will score and analyze the data.

   Departmental faculty

REVIEWER	PRINT NAME	SIGNATURE	DATE
Department Chair/Area Director	Allan Coleman	Allan Coleman	01/17/2022
Dean	Jimmie Baber	Jimmie Baber	1/25/2022
Curriculum Committee Chair	Randy Van Wagnen	R Van Wagnen	3-15-22
Assessment Committee Chair	Shawn Deron		3/16/2022
Please submit completed form to the Office of Curriculum and Assessment (SC 257). Once reviewed by the appropriate faculty committees, we will secure the signature of the VPI and President.			
Vice President for Instruction ☐ Approved for Development ☐ Final Approval	Kimberly Hurns		3-17-22
President	Rose Bellanca		3-23-22

Board Approval	N/A	N/A	4/26/22

Reviewed by C&A Committees 2/10/22