

Program Information Report

Manufacturing & Automotive

Robotics Technician (CTROBT)

Certificate

Program Effective Term: Fall 2022

High Skill Occupation **High Wage Occupation**

The robotics technician certificate is a starting point 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		(18 credits)
ELE 111	Electrical Fundamentals	4
ELE 224	Programmable Controllers (PLCs) I	4
MEC 101	Blueprint Reading for Manufacturing	2
ROB 101	Robotics I - I	2
ROB 110	Robotics I - II	2
ROB 212	Robotics II	4

Minimum Credits Required for the Program:

18

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 each item.

<p>Program Name:</p> <p>Division and Department: Type of</p> <p>Award:</p> <p>Effective Term/Year: Initiator:</p>	<p><u>Robotics Technician</u></p> <p><u>ATP – Advanced Manufacturing</u></p> <p><input type="checkbox"/> AA <input type="checkbox"/> AS <input type="checkbox"/> AAS <input checked="" type="checkbox"/> Cert. <input type="checkbox"/> Adv. Cert. <input type="checkbox"/> Post-Assoc. Cert. <input type="checkbox"/> Cert. of Comp.</p> <p><u>Fall 2022</u></p> <p><u>Allan Coleman</u></p>	<p>Program Code:</p> <p><u>CTROBT</u></p> <p>CIP Code:</p> <p><u>15.0405</u></p>
<p>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.</p>	<p>This embedded certificate will allow students to obtain WCC credentials on the way to an AAS Mechatronics degree. There were no certificates specific to automation.</p>	
<p>Need Need for the program with evidence to support the stated need.</p>	<p>Our program did not have any robotic certificates other than the AAS. This certificate allows students to obtain a minimum WCC credential for entering into the field as a robotic technician.</p>	
<p>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.</p>	<p><u>Outcomes</u></p> <ol style="list-style-type: none"> 1. Read and interpret beginning level robot programs. 2. Demonstrate the proper use of electrical test equipment including multimeter, function generator, and oscilloscope. 3. Develop, interpret and troubleshoot PLC programs with relay-type, timer, counter, data manipulation, math and program control instructions using PLC programming and monitoring software. 	<p><u>Assessment method</u></p> <ol style="list-style-type: none"> 1. Outcome-related departmental exam questions 2. Outcome-related lab exam 3. Outcome-related departmental exam questions and outcome-related lab exam

<p>Curriculum</p> <p>List the courses in the program as they should appear in the catalog. List minimum credits required. Include any notes that should appear below the course list.</p> <p>Associate degree programs must provide a semester by semester program layout.</p>	<p>ROB 101 – Robotics I – I – 2 credits ROB 110 – Robotics I – II – 2 credits ELE 111 – Electrical Fundamentals – 4 credits ROB 212 – Robotics II – 4 credits MEC 101 – Blueprint Reading for Manufacturing – 2 credits ELE 224 – Programmable Controllers (PLCs) I – 4 credits Total: 18 credits</p>																						
<p>Budget</p> <p>Specify program costs in the following areas, per academic year:</p>	<table border="1"> <thead> <tr> <th></th> <th data-bbox="878 455 1192 527">START-UP COSTS</th> <th data-bbox="1200 455 1513 527">ONGOING COSTS</th> </tr> </thead> <tbody> <tr> <td data-bbox="573 537 870 573">Faculty</td> <td data-bbox="878 537 1192 573">\$ 0 .</td> <td data-bbox="1200 537 1513 573">\$ 0 .</td> </tr> <tr> <td data-bbox="573 583 870 619">Training/Travel</td> <td data-bbox="878 583 1192 619">.</td> <td data-bbox="1200 583 1513 619">.</td> </tr> <tr> <td data-bbox="573 630 870 665">Materials/Resources</td> <td data-bbox="878 630 1192 665">.</td> <td data-bbox="1200 630 1513 665">.</td> </tr> <tr> <td data-bbox="573 676 870 711">Facilities/Equipment</td> <td data-bbox="878 676 1192 711">.</td> <td data-bbox="1200 676 1513 711">.</td> </tr> <tr> <td data-bbox="573 722 870 758">Other</td> <td data-bbox="878 722 1192 758">.</td> <td data-bbox="1200 722 1513 758">.</td> </tr> <tr> <td data-bbox="573 768 870 850" style="text-align: right;">TOTAL S:</td> <td data-bbox="878 768 1192 850">\$ 0 .</td> <td data-bbox="1200 768 1513 850">\$ 0 .</td> </tr> </tbody> </table>		START-UP COSTS	ONGOING COSTS	Faculty	\$ 0 .	\$ 0 .	Training/Travel	.	.	Materials/Resources	.	.	Facilities/Equipment	.	.	Other	.	.	TOTAL S:	\$ 0 .	\$ 0 .	
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<p>Program Description for Catalog and Web site</p>	<p>The robotics technician certificate is a starting point 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. People that enjoy technology, working with their hands, and manipulating program code are well-suited for this career.</p>																						
<p>Program Information</p>	<p>Accreditation/Licensure – None required</p> <p>Advisors – Niki Lee</p> <p>Advisory Committee -</p> <p>Admission requirements - None</p> <p>Articulation agreements -</p> <p>Continuing eligibility requirements -</p>																						




Assessment plan:

Program outcomes to be assessed	Assessment tool	When assessment will take place	Courses/other populations	Number students to be assessed
1. Read and interpret beginning level robot programs.	Outcome-related departmental exam questions	Fall 2025	ROB 212	All students

2. Demonstrate the proper use of electrical test equipment including multimeter, function generator, and oscilloscope.	Outcome-related lab exam	Fall 2025	ELE 111	All students
3. Develop, interpret and troubleshoot PLC programs with relay-type, timer, counter, data manipulation, math and program control instructions using PLC programming and monitoring software.	Outcome-related departmental exam questions Outcome-related lab exam	Fall 2025	ELE 224	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 the departmental exams will be scored with an answer key.
Outcome-related lab exam will be scored using a rubric.
2. Indicate the standard of success to be used for this assessment.
70% of students will score 70% 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
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.			
Curriculum Committee Chair	Randy Van Wagnen	R Van Wagnen	2-17-22
Assessment Committee Chair	Shawn Deron		2/23/22
Vice President for Instruction <input type="checkbox"/> Approved for Development <input checked="" type="checkbox"/> Final Approval	Kimberly Hurns		2-28-22
President	Rose Bellanca		2-28-22
Board Approval	N/A	N/A	4/26/22

Reviewed by C&A Committees 2/10/22