Program Information Report

Manufacturing & Automotive

Industrial Electronics Technology II (CVIET2)

Advanced Certificate

Program Effective Term: Fall 2020

High Demand Occupation High Skill Occupation High Wage Occupation

This program builds on the foundation of electricity and electronic control introduced in the Industrial Electronics Technology (CFIET) certificate, providing advanced instruction in the areas of industrial automation and electrical standards. Students will learn to apply, control and troubleshoot electric motors, relate their understanding of electricity and controls to the requirements of the National Electrical Code, and pursue other learning critical to industrial automation such as fluid power motion control and digital networks.

Articulation:
Eastern Michigan University, BS degrees

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/curriculum/articulation/levelone/colleges/.

Program Admission Requirements:
Successful completion of the Industrial Electronics Technology certificate, appropriate prerequisite courses, or equivalent experience.

Major/Area Requirements		**(16 credits)**
ELE 134	Motors and Controls	4
ELE 204	National Electrical Code	4
	Select a minimum of 8 credit hours of restricted electives including CST 185, FLP 225 and/or another ELE or FLP course.*	8

Minimum Credits Required for the Program: 16

Notes:

**Students may select alternative electives with the permission of department faculty.*

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: CVIET2

Program Name: INDUSTRIAL ELECTRONICS TECHNOLOGY II

Effective Term: F2019

Division Code: ATP

Department: INDUSTRIAL TECHNOLOGY

Directions:

1. Attach the current program listing from the WCC catalog or Web site and indicate any changes to be made.
2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.
3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

☒ Review
✓ Remove course(s): _ELE 284_____
✓ Add course(s): Technical Electives (FLP 225, CST 185, or other ~~approved~~ courses (8 hrs) approved by dept. faculty
☐ Program title
✓ Description
☐ Type of award
✓ Advisors
☒ Articulation information

☒ **Program admission requirements**
☐ Continuing eligibility requirements
✓ Program outcomes
☐ Accreditation information
☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
☐ Other_____

Show all changes on the attached page from the catalog.
- See CVIET2 catalog listing_update 20190519.docx
-

Rationale for proposed changes or discontinuation:
Employer needs have changed. ELE 284 is no longer relevant. Students need flexibility to take other courses relevant to industrial electronics to complete the certificate.

Financial/staffing/equipment/space implications:
None

List departments that have been consulted regarding their use of this program.
None

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Dale Petty	Dale Petty	5/19/2019
Department Chair	Tom Penrod		7/22/2019
Division Dean/Administrator	Brandon Tucker		9/25/19
Vice President for Instruction	Kimberly Humphs		10/4/2019

Program Information Report

Manufacturing & Automotive

Industrial Electronics Technology II (CVIET2)

Advanced Certificate

Program Effective Term: **Fall 2019**

High Demand Occupation **High Skill Occupation** **High Wage Occupation**

This program provides advanced instruction for students who wish to enhance their skills in the area of industrial electronic control. The courses in this certificate build on the foundation of electricity and electronic control introduced in the Industrial Electronics Technology certificate. Students will learn to apply and control electric motors, use structured techniques to program PLCs, and relate their understanding of electricity and controls to the requirements of the National Electrical Code. This program prepares students to take the State of Michigan Journeyman Electrician Licensing Exam.

Articulation:
Eastern Michigan University, several BS degrees.

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/curriculum/articulation/levelone/colleges/.

Program Admission Requirements:
Completion of the Industrial Electronics Technology certificate or equivalent.

Major/Area Requirements		(16 credits)
ELE 134	Motors and Controls	4
ELE 204	National Electrical Code	4
	Select a minimum of 8 credit hours of restricted electives including CST 185, FLP 225 and/or another ELE or FLP course.*	8

Minimum Credits Required for the Program: **16**

Notes:

**Students may select alternative electives with the permission of department faculty.*

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: CVIET2

Program Name: INDUSTRIAL ELECTRONICS TECHNOLOGY II

Effective Term: F2019

Division Code: ATP

Department: INDUSTRIAL TECHNOLOGY

Directions:

1. Attach the current program listing from the WCC catalog or Web site and indicate any changes to be made.
2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.
3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

- ☒ Review
- ✓ Remove course(s): _ELE 284_____
- ✓ Add course(s): Technical Electives (FLP 225, CST 185, or other ~~approved~~ courses (8 hrs) approved by dept. faculty
- ☐ Program title
- ✓ Description
- ☐ Type of award
- ✓ Advisors
- ☒ Articulation information
- ☒ **Program admission requirements**
- ☐ Continuing eligibility requirements
- ✓ Program outcomes
- ☐ Accreditation information
- ☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
- ☐ Other _____

Show all changes on the attached page from the catalog.

- See CVIET2 catalog listing_update 20190519.docx
-

Rationale for proposed changes or discontinuation:

Employer needs have changed. ELE 284 is no longer relevant. Students need flexibility to take other courses relevant to industrial electronics to complete the certificate.

Financial/staffing/equipment/space implications:

None

List departments that have been consulted regarding their use of this program.

None

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Dale Petty	Dale Petty	5/19/2019
Department Chair	Tom Penrod		7/22/2019
Division Dean/Administrator	Brandon Tudor		9/20/19
Vice President for Instruction	Kimberly Hurns		10/4/2019
President			

Do not write in shaded area. Entered in: Banner _____ C&A Database 10/8/19 Log File 10/8/19 Board Approval _____

Please submit completed form to the Office of Curriculum and Assessment (SC 257).

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.

Program Name:	Industrial Electronics Technology II	**Program Code:** CVIET2
Division and Department:	BCT/ELED	
Type of Award:	☐ AA ☐ AS ☐ AAS ☐ Cert. ☒ Adv. Cert. ☐ Post-Assoc. Cert. ☐ Cert. of Comp.	**CIP Code:** 47.0105
Effective Term/Year:	Fall 2007	
Initiator:	Gary Downen	

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 advanced certificate, when combined with the CFIET (Industrial Electronics Technology) certificate, provides the technical training required for a student to enter the field of industrial electrician. The courses in this certificate all require prerequisites covered in the CFIET certificate or equivalent job experience. ELE 134 (Motors and Controls) and ELE 204 (National Electrical Code) are standard courses included in the apprenticeship programs offered by the department.	
Need Need for the program with evidence to support the stated need.	ELE 134 (Motors and Controls) and ELE 204 (National Electrical Code) have been offered as part of the department's core requirements from the very beginning of the department. They were removed from the CFIET Certificate in 2004 to allow the certificate to fit the needs of the new Automation Technology Associate in Applied Science Degree. They have not, however, lost their importance as core courses for those students seeking training as industrial electricians. These two courses along with ELE 284 (Control Logic Programming), an updated version of ELE 137 (another course that dates back to the beginning of the department), are being repackage as an advanced certificate to recognize their importance in the curriculum of students seeking training as industrial electricians.	
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 1. Recognize the principles of operation of electrical machines.	Assessment method Blind scored, departmental test questions administered in all sections of ELE 134 during the semester of assessment. (See attachment 1.)
	2. Troubleshoot motor control circuits utilizing electrical diagrams.	Blind scored, departmental test questions administered in all sections of ELE 134 during the semester of assessment. (See attachment 1.)
	3. Demonstrate proficiency in interpreting the NEC rules and in performing electrical calculations using the tables in the NEC.	Blind scored, departmental test questions administered in all sections of ELE 204 during the semester of assessment. (See attachment 1.)
	4. Identify structured techniques used to program PLCs.	Blind scored, departmental test questions administered in all sections of ELE 284 during the semester of assessment. (See attachment 1.)

Please return completed form to the Office of Curriculum & Assessment and email an electronic copy to **sjohn@wccnet.edu** for posting on the website.

Curriculum 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.	**Major/Area Requirements** **(12 Credits)** ELE 134 Motors and Controls 4 ELE 204 National Electrical Code 4 ELE 284 Control Logic Programming 4 **Minimum Credits Required for the Program: 12 Credits**

Budget Specify program costs in the following areas, per academic year: *Because the program courses are already in place, there are no new costs, neither start-up or ongoing.*		**START-UP COSTS**	**ONGOING COSTS**
	Faculty	**$ 0.00**	**$.**
	Training/Travel	**0.00**	**.**
	Materials/Resources	**0.00**	**Included in**
	Facilities/Equipment	**0.00**	**current budget**
	Other	**0.00**	**.**
	TOTALS:	**$ 0.00**	**$ 0 .00**

Program Description for Catalog and Web site	This program provides advanced instruction for students who wish to enhance their skills in the area of industrial electronic control. The courses in this certificate build on the foundation of electricity and electronic control introduced in the CFIET certificate. Students will learn to apply and control electric motors, use structured techniques to program PLCs, and relate their understanding of electricity and controls to the requirements of the National Electrical Code.
Program Information	**Accreditation/Licensure –** Prepares Students to take the State of Michigan Journeyman Electrician Licensing Examination **Advisors –** (See below) **Advisory Committee -** William Sumpter, Inergy Automotive Systems; Larry Bonds, Bonds Electric Inc. **Admission requirements –** Completion of CFIET certificate or equivalent **Articulation agreements -** None **Continuing eligibility requirements -** None

Assessment plan:

Program outcomes to be assessed	**Assessment tool**	**When assessment will take place**	**Describe population to be assessed**	**Number students to be assessed**
1. Recognize the principles of operation of electrical machines.	Blind scored, departmental test questions administered in all sections of ELE 134 during the semester of assessment. (See attach. 1.)	Every three years starting Winter 2009	All students enrolled in program courses during the semester of assessment	Approx. 15 – 24
2. Troubleshoot motor control circuits utilizing electrical diagrams.	Blind scored, departmental test questions administered in all sections of ELE 134 during the semester of assessment. (See attach. 1.)	Every three years starting Winter 2009	All students enrolled in program courses during the semester of assessment	Approx. 15 – 24
3. Demonstrate proficiency in interpreting the NEC rules and in performing electrical calculations using the tables in the NEC.	Blind scored, departmental test questions administered in all sections of ELE 204 during the semester of assessment. (See attach. 1.)	Every three years starting Winter 2009	All students enrolled in program courses during the semester of assessment	Approx. 15 – 24
4. Identify structured techniques used to program PLCs.	Blind scored, departmental test questions administered in all sections of ELE 284 during the semester of assessment. (See attach. 1.)	Every three years starting Winter 2009	All students enrolled in program courses during the semester of assessment	Approx. 15 – 24

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.

   Blind scored, departmental test questions administered in all sections being assessed included as part of instructor developed final exams. (See attachment 1.) The assessment results will be evaluated by the program faculty.

2. Indicate the standard of success to be used for this assessment.

   Each of the program outcomes will be evaluated seperately with an expectation that 90% of the program students will have successfully achived the given outcome with a score of 75% or better.

3. Indicate who will score and analyze the data.

   The assessment results will be evaluated by the ELE faculty.

4. Explain how and when the assessment results will be used for program improvement.

   The ELE faculty will analyze the results of the assessment data for areas of strengths and weaknesses. Ideas will be generated to addresses the areas of weaknesses.

REVIEWER	PRINT NAME	SIGNATURE	DATE
Department Chair/Area Director	Gary Downen	Gary Downen	12/18/06
Dean	Rosemary Wilson	Rosemary Wilson	1/4/07
Vice President for Instruction ☑ Approved for Development ☐ Final Approval		Roger M. Salazar	4/10/07
President		Patty Whitworth	5/14/07
Board Approval			

db logged 1/16/07 sj

Program Information Report

Industrial, Manufacturing, & Automation Technology

Industrial Electronics Technology II (CVIET2)

Advanced Certificate

Program Effective Term: **Fall 2007**

This program provides advanced instruction for students who wish to enhance their skills in the area of industrial electronic control. The courses in this certificate build on the foundation of electricity and electronic control introduced in the Industrial Electronics Technology I certificate. Students will learn to apply and control electric motors, use structured techniques to program PLCs, and relate their understanding of electricity and controls to the requirements of the National Electrical Code. This program prepares students to take the State of Michigan Journeyman Electrician Licensing Exam.

Program Admission Requirements:
Completion of the Industrial Electronics Technology I certificate or equivalent.

Major/Area Requirements		**(12 credits)**
ELE 134	Motors and Controls	4
ELE 204	National Electrical Code	4
ELE 284	Control Logic Programming	4
Minimum Credits Required for the Program:		**12**