WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE FORM

Program Code:	Program Name:	Effective Term:
CFIET	Industrial Electronics Technology	Fall 2004

Directions:

1. Attach the current program listing from the WCC catalog 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 Course Syllabus Form, but should be submitted at the same time as the program change form.

Requested Changes:

- [x] Remove 5 course(s)
- [ ] Add _____ course(s)
- [x] Total credits: Current credits 31 After changes 17
- [ ] Title (title was _____)
- [x] Description
- [ ] Advisors
- [ ] Articulation information
- [x] Program admission requirements
- [ ] Continuing eligibility requirements
- [ ] Program outcomes

Other _____

Show all changes on the attached page from the catalog.

Rationale for proposed changes:

Employment as an industrial electricity/electronics technician continues to evolve. At the heart of today's industrial control system is the programmable logic controller (PLC) to which various sensors and actuators are connected. Advances in technology have also resulted in a breakdown of traditional job descriptions. No longer are the various technologies discretely divided amongst the traditionally defined skilled trades. In response to these changes in the workplace, the Industrial Technology Department, working with the Electricity/Electronics Department, is proposing the new Manufacturing Technology program of which the revised CFIET certificate is an option.

It is the intention of the ELED department, following further study, to propose an advanced certificate in industrial electricity/electronics to complement and expand on the above offerings.

Financial/staffing/equipment/space implications:

None

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

Industrial Technology

Signatures:

Reviewer	Print Name	Signature	Date
Program Change Initiator	Gary Downen	Gary Downen	3/29/04

Rec'd 4.12.04

Office of Curriculum & Articulation Services

Program Change Form 8-2003

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Office of Curriculum & Articulation Services

Department Chair	Gary Downen	Gary W. Downen	3/29/04
Division Dean/Administrator	Rosemary Wilson	[signature]	3/29/04
Vice President for Instruction	Roger Palay	Roger W. Palay	4/12/04

Please submit completed form to the Office of Curriculum and Articulation Services.

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Industrial Electronics Technology (CFIET) — Certificate

Major/Area Requirements		17 (~~31~~ Credits)
ELE 111	Electrical Fundamentals	4
~~ELE 134~~	~~Motors and Controls~~	~~4~~
~~ELE 137~~	~~Switching Logic~~	~~4~~
~~ELE 204~~	~~National Electrical Code~~	~~4~~
ELE 211	Basic Electronics	4
ELE 224	Introduction to PLC's	4
ELE 254	PLC Applications	5
~~ELE 174 or~~	~~ELE Co-op Education I~~	
~~ELE 299~~	~~Customer Relations~~	~~2~~
Total Credits Required for the Program:		17 ~~31~~ Credits

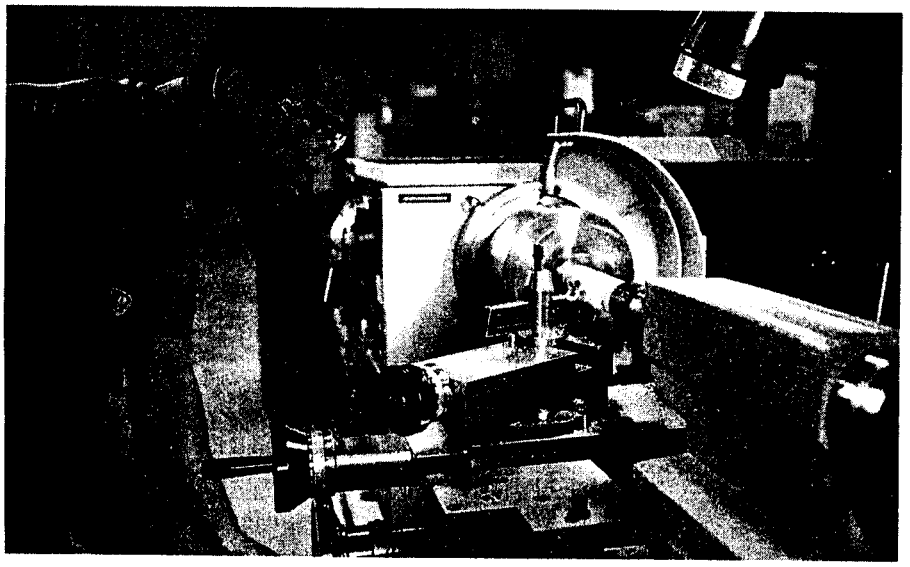
~~Industrial Electronics Technology (CFIET)~~

~~This program prepares you for entry level jobs in any of the industrial electricity/electronics cluster of occupations. You will develop skills in the installation, maintenance, and troubleshooting of industrial control systems with a focus on programmable logic controllers, electric motors, electronic sensors and control circuits. In addition, the importance of relating effectively with customers, managers, and co-workers is emphasized. Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a "C" or better to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.~~

see attached

Machine Tool Technology (CVMTTA) — Advanced Certificate

Major/Area Requirements		(16 Credits)
MTT 103	Introduction to Materials	3
MTT 202	Machine Tool Operations and Set-Up I	4
MTT 203	Machine Tool Operations and Set-Up II	4
NCT 121	Manual Programming and NC Tool Operation	5
Total Credits Required for the Program:		**16 Credits**



Machine Tool Technology (CVMTTA)

This program prepares you for manufacturing jobs where you will use advanced machine tool setups for the manufacture of non-production parts or prototype parts for industry. This program provides advanced skills in the use of tool room lathes, mills, precision grinders, and sophisticated measuring instruments. You will learn machining operations through the production of parts, on modern conventional mills, lathes, and grinding equipment in WCC's extensive machine tool laboratory. Opportunities for employment in the machine tool industry are great. This program can launch you into skilled occupations such as an apprentice tool and diemaker or machinist. Successful completion of the Manufacturing and Industrial Computing Certificate or equivalent industry experience is required for admission to the program.

Current Program

Industrial Electronics Technology (CFIET)

This program prepares you for entry-level jobs in any of the industrial electricity/electronics cluster of occupations. You will develop skill in the installation, maintenance, and troubleshooting of industrial control systems with a focus on programmable logic controllers, electric motors, and electronic sensors and control circuits. In addition, the importance of relating effectively with customers, managers, and co-workers is emphasized. Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a "C" or better to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.

Major/Area Requirements		**(31 Credits)**
ELE 111	Electrical Fundamentals	4
ELE 134	Motors and Controls	4
ELE 137	Switching Logic	4
ELE 204	National Electrical Code	4
ELE 211	Basic Electronics	4
ELE 224	Introduction to PLC's	4
ELE 254	PLC Applications	5
Choose:	ELE 174 ELE Co-op Education I or ELE 299 Customer Relations	2
Total Credits Required for the Program:		**31Credits**

Proposed Program Fall 2004

Industrial Electronics Technology (CTIET)

This program prepares you for entry-level jobs in any of the industrial electricity/electronics cluster of occupations. You will develop skill in the installation, maintenance, and troubleshooting of industrial control systems with a focus on programmable logic controllers, electronic sensors and electronic control circuits. Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 or MTH 151 with a "C" or better to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.

Major/Area Requirements		**(17 Credits)**
ELE 111	Electrical Fundamentals	4
ELE 211	Basic Electronics	4
ELE 224	Introduction to PLC's	4
ELE 254	PLC Applications	5
Total Credits Required for the Program:		**17 Credits**

Industrial Electronics Technology (CFIET)
Certificate

Program Effective Term: Fall 2004

This program prepares you for entry-level jobs in any of the industrial electricity/electronics cluster of occupations. You will develop skills in the installation, maintenance, and troubleshooting of industrial control systems with a focus on programmable logic controllers, electronic sensors, and electronic control circuits.

Program Admission Requirements:
Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 or MTH 151 with a "C" or better to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.

Major/Area Requirements		**(17 credits)**
ELE 111	Electrical Fundamentals	4
ELE 211	Basic Electronics	4
ELE 224	Introduction to PLC's	4
ELE 254	PLC Applications	5

Minimum Credits Required for the Program: **17**

Industrial and Engineering Technology

Industrial Electronics Technology (CFIET)

'UNDER CONSTRUCTION'

Certificate

Program Effective Term: Fall 2004

This program prepares you for entry-level jobs in any of the industrial electricity/electronics cluster of occupations. You will develop skill in the installation, maintenance, and troubleshooting of industrial control systems with a focus on programmable logic controllers, electronic sensors, and electronic control circuits.

Program Admission Requirements:

-Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 or MTH 151 with a "C" or better to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.

Major/Area Requirements		**(17 credits)**
ELE 111	Electrical Fundamentals	4
ELE 211	Basic Electronics	4
ELE 224	Introduction to PLC's	4
ELE 254	PLC Applications	5

Minimum Credits Required for the Program: **17**

CFIET

Washington Community College

Program Change Request Form

Program Code: ~~CTELE~~ **Program Name: Electronics Technology** **Effective Term: Fall 2002**

Attach the current program listing from the WCC catalog and indicate any changes that you would like to make. Draw lines through anything that should be removed and write in any additions. Extensive narrative changes may be included on a separate sheet. Check the boxes below for each type of change being proposed. If you are making changes to courses or proposing new courses (that don't currently exist) as part of this proposal, they must be approved separately using a Course-Syllabus Approval Form (CSAF).

1. Requested Changes:

- ☒ Remove 3 Course(s)
- ☒ Add 3 Course(s)
- ☒ Increase/Decrease Total Credits: Current Credits 27 After Changes ~~29~~ 30
- ☐ Course Sequence
- ☒ Name (new name Industrial Electronics Technology)
- ☒ Description
- ☐ Advisors
- ☐ Articulation Agreements
- ☒ Program Admission Requirements/Procedures
- ☐ Continuing Eligibility Requirements
- ☐ Footnotes
- ☒ Other Spelling correction

Show all changes on the attached program sheet.

Rationale for Proposed Changes:

The current program is intended to prepare students for any of a broad range of occupations in the electricity/electronics cluster. However, for the past several years we have seen little interest in the program with the exception of students interested in industrial electronics. The courses we are dropping from the program are not relevant to industrial electonics, nor have they been offered in the past several years due to low enrollment. The courses we are adding are already part of our current offerings and are specific to the area of industrial electronics.

3. Financial/Staffing/Equipment/Space Implications:

None

4. Has the department consulted with all departments that may be impacted? Yes ☒ No ☐ NA ☐

Comments:

Signatures:

Reviewer	Print Name	Signature	Date
Program Change Initiator:	Gary Downen	Gary N. Downen	2/12/02
Department Chair:	Gary Downen	Gary N. Downen	2/12/02
Division Dean:	Rosemary Wilson	Rosemary Wilson	2/15/02
VP, Instruction/Student Services:	Guy Altieri		4/2/8

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Copies: Initiator, Department Chair, Dean, Curriculum File New Listing to: Counseling; Admissions MAY 2002

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Industrial Electronics Technology (CTELE) Certificate

~~This program prepares you for entry-level jobs in almost any of the electricity/electronics cluster of occupations, where you will be expected to be skilled in the installation, maintenance, and troubleshooting of personal computers, electric motors and motor controls; and in relating to customers, managers, and co-workers.~~

This program prepares you for entry-level jobs in any of the industrial electricity/electronics cluster of occupations. You will develop skill in the installation, maintenance, and troubleshooting of industrial control systems with a focus on programmable logic controllers, electric motors, and electronic sensors and control circuits. In addition, the importance of relating effectively with customers, managers, and co-workers is emphasized.

Business and Computer Technologies Division
~~Electricity~~ Electricity/Electronics Department

Advisors: William Cleary, Gary Downen, Dale Petty

Program Admission Requirements:

- Two years of high school algebra with a grade of "C" or better, or MTH ~~169~~ 151, or a score of 66 on the COMPASS Algebra test ~~on math placement test~~
- One year of high school Windows operating system with a grade of "C" or better, or CIS 117, or permission of the program advisor

Major/Area Requirements (~~27~~ 29 Credits)

✓ELE 111	Electrical Fundamentals	4
✓ELE 134	Motors and Controls	4
✓ELE 137	Switching Logic	4
~~ELE 139~~	~~Microprocessors~~	~~4~~
~~ELE 150~~	~~PC Hardware Concepts and Troubleshooting~~	~~4~~
~~ELE 209~~	~~Operational Amplifiers~~	~~2~~
✓ELE 211	Basic Electronics	4
✓ELE 204	National Electrical Code	4
✓ELE 224	Introduction to PLC's	4
✓ELE 254	PLC Applications	4
Choose: ~~137~~	ELE 174 ELE Co-op Education I or	
none	ELE 299 Customer Relations	2
Minimum Credits Required for the Program:		~~27~~ ~~29~~ 30

Program Approval Document

Mastery Certificate in Electronics Technology

Prepared by

John Trame, Chair, Electricity/Electronics Department

Roger Bertoia, Dean, Technology Division

Washtenaw Community College

May 21, 1998

WASHTENAW COMMUNITY COLLEGE
PROGRAM AUTHORIZATION FORM

1. Program Title: Electronics Technology **Program Code:** ELEC

2. Division Technology **3. Department** Electricity/Electronics **CIP Code** 47.0101

4. Type of Program: [ ] A.A. [ ] A.S. [ ] A.A.S. [ ] A.T.S.

[ ] Advanced Certificate [X] Mastery Certificate [ ] Achievement Certificate [ ] Certificate of Completion

5. Will this program be Perkins funded? [X] yes [ ] no **6. Effective Term** Fall 1998

7. Program Description (for Catalog, brochures, etc.:

This program trains individuals for entry-level employment in almost any of the electrical/electronics cluster of occupations. Students learn the fundamentals of electricity and electronics including the installation, maintenance, and troubleshooting of personal computers, electric motors and motor controls. Students also learn how to communicate effectively in oral and written form and to exercise the interpersonal skills required to work successfully with customers, managers and co-workers.

8. Advisors: William Cleary, Gary Downen, Lawrence Kramer, Phillip Mullins, Dale Petty, John Trame, Catherine Wagner

9. Admissions Criteria:	10. Criteria for Continuing Program Eligibility:
1. Two years of high school algebra with a grade of "C" or better, or MTH 097 and MTH 169, or equivalent placement test. 2. One year of Windows operating system with a grade of "C" or better, or CIS 116 & CIS 117, or permission of program advisor.	Successful completion of courses within the program.

11. Attach a Program Approval Document [PAD], which includes the following:

A. Program Description
B. Program Objectives
C. Needs Assessment
D. Enrollment Projections
E. Program Cost Analysis
F. Course Descriptions
G. Analysis of Affected Instructional Units
H. Articulations
I. Licensure/Accreditation

Approval Recommended:	Print Name	Signature	Date
Program Initiator	John Trame	John Trame	6-16-98
Department Chair/Area Director	John Trame	John Trame	6-16-98
Dean	Roger Bertoia	Roger K. Bertoia	6/17/98
VP, Instruction/Student Services	Guy Altieri	Guy Altieri	6/18/98
President	Gunder Myran	Gunder W. Myran	6/18/98
Date of Board Approval	June 23, 1998		

Available on disk.

Curriculum and Articulation Services 5/14/1998 Data File 6/17/98 Curriculum File 6/17/98 Catalog 99-04
Program Authorization Form Copies: - Department Chair, Dean, Admissions, Counseling, Student Records, Curriculum Committee
Document Code: ELEC authorization.doc

6/17/98
v PISS

COURSE REQUIREMENTS

Course	Title	Credit	Pre-requisites/Co-requisites
Fall:			
ELE 104	Electrical Soldering	1	None
ELE 111	Electrical Fundamentals	4	MTH 151 or equiv. (high school algebra)
ELE 137	Switching Logic	4	None
ELE 140	Software Concepts or		None
CPS 171	Introduction to Programming with C++	4	Computer Literacy and MTH 169
ENG	Restricted ENG requirement (ENG 107 or ENG 111)	3-4	
		16-17	
Winter:			
ELE 134	Motors and Controls	4	ELE 111
ELE 139A	Microprocessors A	2	ELE 137
ELE150	PC Hardware Concepts and	4	CIS 116 &117 or equivalent
ELE 209	Troubleshooting	2	ELE 111
ELE 211	Basic Electronics	4	ELE 111
ELE	Restricted ELE Requirement (ELE 299 or ELE 174)	1	ELE 299-(None) ELE 174-(ELE 111, 137, & 140)
HSC 131A		0.5	None
		17.5	
	Total Credits:	**33.5-34.5**	

A. PROGRAM DESCRIPTION

This certificate program trains individuals for entry-level employment in almost any of the electrical/electronics cluster of occupations. Students learn the fundamentals of electricity and electronics, including the installation, maintenance and troubleshooting of personal computers, electric motors and motor controls. Students also learn how to communicate effectively in oral and written form and to exercise the interpersonal skills required to work successfully with customers, managers and co-workers.

B. PROGRAM OBJECTIVES

1. To prepare students for entry-level employment in almost any of the electrical/electronic cluster of occupations.

2. To prepare students for basic entry-level jobs within a manageable time frame that fits their busy schedules.

C. NEEDS ASSESSMENT

The need for this program is based on interviews with current students in electronics classes. Many of these students are not seeking an Associates degree, because they are unable to make the long term commitment required to accomplish this goal since they are working full-time and supporting families. Successful enrollment trends in the recently developed Computer Service Technician Certificate program indicate that one-year certificates fill a need that our Associates degree cannot.

For the past three years we have been unable to provide enough graduates to fill the market need for electronic technicians. Employers are contacting us repeatedly, with requests for students interested in employment in this field, yet our current students are not interested in these jobs, because many of them have jobs in the field and are here for upgrade skills.

D. ENROLLMENT PROJECTIONS

Students enrolling in this program will be new to the field of electronics, looking for a short training period. This program should increase enrollment in the first year courses by at least ten percent.

E. PROGRAM COST ANALYSIS

This program will incur no additional cost, since it is basically the first two semesters of our current Associates degree in electronics technology.

F. COURSE DESCRIPTIONS

ELE 104: Electrical Soldering
Upon satisfactory completion of this course the student will posses the knowledge and skills necessary for entry-level employment as a bench-soldering technician. The

student will learn the different solder alloys and their fluid temperatures, how to control heat and the flow of molten solder, and the proper procedures for removing and replacing common electronic components.

ELE 111: Electrical Fundamentals
A basic electricity course including both DC and AC circuits. The course has been designed for those students who need an understanding of electrical principles and applications but do not need the theoretical or mathematical depth required for circuit design. Lab exercises deal with many of the practical applications of electricity along with learning to use test equipment for the purpose of circuit diagnosis and troubleshooting.

ELE 137: Switching Logic
This is a beginning course in digital switching logic. Students learn the devices and circuits used to build computers and other digital control equipment. Lecture topics include data codes, digital logic gates and circuits, ladder logic diagrams and the use of programmable logic controllers (PLCs).

ELE 140: Software Concepts
Students use standard software design techniques to develop and code algorithms for the solution of electrical and electronics problems, thus gaining a useful tool for problem solution while learning software fundamentals such as understanding the difference between syntax and semantics, refinement of algorithms into working solutions, executing programs on a computer system, correct use of appropriate subsets of a language, development of consistent test cases and preparation of understandable documentation.

CPS 171: Introduction to Programming with C++
This course is an introduction to programming using the C++ language. Students should have basic experience using a computer but no prior programming is required. (Experienced programmers should consider CPS 290) Students learn about problem solving strategies, top-down program development and programming style. Topics include sequential, decision and iterative control structures, functions, basic data structures and an introduction to classes. Students write and execute approximately eight C++ programs.

ELE 134: Motors and Controls
Topics include DC motors and generators, alternators, AC motors and typical controls for DC and AC motors. This is a hands-on course with heavy emphasis on laboratory exercises.

ELE 139A: Microprocessors A
This course is an introduction to the physical makeup of a microprocessor-based computer system. The major functional elements of a microprocessor system and their relationship to each other are examined. Topics include data coding, data storage microprocessor architecture, input/output devices and machine language programming. The laboratory exercises provide experience with microprocessor hardware and machine language programming.

ELE 150: PC Hardware Concepts and Troubleshooting
This course is designed for the beginning user and those without a technical background. Through hands-on experiences, students will examine the internal hardware components of IBM compatible computers with an emphasis on troubleshooting and repair. Topics covered include what the DOS operating system does and how it works with the computer's hardware to run application programs. You will explore how to upgrade and optimize your computer and how to solve typical hardware and software problems using time saving and cost-effective techniques.

ELE 209: Operational Amplifiers
This course is a lecture and laboratory course covering operational amplifier circuits, active filters, and regulators. Circuits are constructed and tested in the laboratory. Students also learn how to service equipment containing these circuits.

ELE 211: Basic Electronics
Topics include DC motors and generators, alternators, AC motors and typical controls for DC and AC motors. This is a hands-on course with heavy emphasis on laboratory exercises.

ELE 299: Customer Relations
Students enhance their interpersonal skills through the techniques gained in this course. Developing insight using demonstrations, videotape, role playing, and interaction, the student is guided in a curriculum, which builds a value-added attitude for customer service personnel. Skills learned include controlling one's emotions in difficult situations and increasing customer satisfaction.

ELE 174: ELE Co-op I
See the description for all co-op courses in the catalog.

HSC 131A: Community CPR
This course prepares students to perform adult, child, and infant cardiopulmonary resuscitation (CPR). Information about preventing injury and illness is provided. Students also learn basic care for illness or injury until professional help arrives. Course objectives follow American Red Cross guidelines, and successful students earn the ARC Community CPR card.

G. ANALYSIS OF AFFECTED INSTRUCTIONAL UNITS

The packaging of our first year of the associate's degree into a certificate will not impact other programs offered at WCC. The two electrical fundamentals courses (ELE 123A and ELE 123B) are being combined into one course (ELE 111); however, this change is also being implemented in the associate degree. This change has been discussed with all affected parties. As a result, the necessary changes are being implemented in the affected programs.

H. ARTICULATIONS

This program is not intended to be fully articulated with four-year institutions, since it is only a one-year program. Courses will, of course, transfer on a course by course basis.

Many electronics courses currently transfer to a variety of local universities and colleges.

The course changes will be relayed to the high schools, which currently have articulation agreements with the electronics department.

I. LICENSURE/ACCREDITATION (IF APPLICABLE)

This program is not accredited or licensed, and is not intended to be licensed or accredited.

Washtenaw Community College **MEMORANDUM**

Office of the Vice President

TO: Deans
Department Chairs
EP Members

FROM: Guy Altieri

DATE: April 23, 1998

RE: Preliminary Program Announcement (PPA) for a New Certificate Program
Proposal for Electronic Technology Certificate

I have given my support to the attached Preliminary Program Announcement (PPA) for a new certificate for Electronic Technology. In our program development process this means that the Electronics Department and Dean Bertoia are now authorized to prepare a Program Approval Document (PAD) which will further the idea. The PAD is intended to draw together the relevant data needed to explore the viability of this program at WCC.

The PPA is to provide broad awareness and preliminary authorization for the purpose of studying a new program proposal. We are saying, in essence, that through preliminary review we believe that a program idea should move to an active development stage. A full program document (PAD) now needs to be developed and approved up through the Board level, before the proposed certificate program can appear in our catalog and receive students.

The attached PPA is being widely distributed so that all parties have the opportunity to review and contribute to the review of this program possibility. Anyone interested in commenting on the program should address their remarks to the Electronics Department (John Trame, Department Chairperson) and Dean Bertoia, with a copy sent to my office as well.

CC: Curriculum Committee Members
Planning Office (Linda Howdyshell)
David Gatewood
Student Services Directors
Marty Heator, Promotional Services

PRELIMINARY PROGRAM APPROVAL FORM [PPAF]

Initiator(s): John Trame

Academic Divisions: Technology

Type of Program: ¨ Degree X ¨ Certificate √ Other, specify mastery certificate

1. General Description of Program (purpose, curriculum design, need for new courses):

   Title: Electronics Technology Certificate (ELEC)

   This program trains individuals for entry-level employment in almost any of the electrical/electronics cluster of occupations. Students learn the fundamentals of electricity and electronics, including the installation, maintenance and troubleshooting of personal computers, electric motors and motor controls. Students also learn how to communicate effectively in oral and written form and to exercise the interpersonal skills required to work successfully with customers, managers and co-workers.

2. Need for Program (student intent, placement):

   The purpose of this program is to provide entry level skills for those who wish to enter the field of electronics, as repair technicians. This certificate is designed to be the first year of the associate degree program in electronics technology. This design will allow graduates of the program to obtain employment, and return for the completion of the associate degree, with no loss of credit.

3. Enrollment Projections:

   Approximately a ten percent increase to enrollments of the first year of the associate of electronics technology program.

4. Instructional Resources and Space (equipment, labs, classrooms, consumable supplies)

   No new resources will be required. This is the first year of the associate of electronic technology.

5. Faculty Resources (full-time, part-time, consultant)

   No new faculty resources will be required.

6. Curricular Connections (WCC instructional units, individual articulations, accreditations)

   This is the first year of the associate degree in electronics technology.

7. Program Development Plan (timetable, costs, personnel)

   Already developed.

Reviews:

Instructional Unit _____ Date: _____

Divisional Council Roger R. Burton Date: 4/16/98

IAC: _____ Date: _____

Approvals:

Divisional Dean(s) Roger R. Burton Date: 4/16/98

_____ Date: _____

Vice President for Instruction and Student Services:

- Approved for development of PAD (Program Approval Document)
- Returned for additional review/development of PPAF (details attached)
- Not approved

Vice President's signature Mary Allen Date: 4/16/98

cc: President's Cabinet
Curriculum Committee
Deans
Initiator(s)

PPAF/9-25-91

PROPOSED 1998/1999

ELECTRONICS TECHNICIAN
COLLEGE CERTIFICATE PROGRAM: CODE ELEC

Advisors: William Cleary, Gary Downen, Lawrence Kramer, Philip Mullins, Dale Petty, John Trame, Catherine Wagner

This certificate program trains individuals for entry-level employment in almost any of the electrical/electronics cluster of occupations. Students learn the fundamentals of electricity and electronics, including the installation, maintenance and troubleshooting of personal computers, electric motors and motor controls. Students also learn how to communicate effectively in oral and written form and to exercise the interpersonal skills required to work successfully with customers, managers and co-workers.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ELE 104	Electrical Soldering	1
ELE 111	Electrical Fundamentals	4
ELE 137	Switching Logic	4
ELE 140	Software Concepts or	
CPS 171	Introduction to Programming with C++	4
ENG/COM	Restricted ENG/COM Requirement	3-4
		16-17
Second Semester (Winter)		
ELE 134	Motors and Controls	4
ELE139A	Microprocessors A	2
ELE 150	PC Hardware Concepts and Troubleshooting	4
ELE 209	Operational Amplifiers	2
ELE 211	Basic Electronics	4
ELE 299	Customer Relations	
	(or ELE 174 - ELE Co-op I)	1
HSC 131A	Community CPR	0.5
		17.5

Total credit hours for program: 33.5-34.5

Course Number	Course Title	Credit Hours
Fall Semester		
ELE 104	Electrical Soldering	1
ELE 111	Electrical Fundamentals	4
ELE 137	Switching Logic	4
ELE 140 or CPS 171	Software Concepts or Introduction to Programming with C++	4
ENG/COM	Restricted ENG/COM Elective	3-4
		16-17
Winter Semester		
ELE 150	PC Hardware Concepts and Troubleshooting	4
ELE 211	Basic Electronics	4
ELE 134	Motors and Controls	4
ELE 139A	Microprocessors A	2
ELE 209	Operational Amplifiers	2
ELE 299 or ELE 174	Customer Relations or Electrical C0-op I	1
HSC 131A	Community CPR	0.5
		17.5
TOTAL HOURS		33.5-34.5