

Computer Engineering Technology (A40160)

ENGINEERING AND TECHNOLOGY PATHWAYS

These curriculums are designed to prepare students through the study and application of principles from mathematics, natural sciences, and technology and applied processes based on these subject areas.

Course work includes mathematics, natural sciences, and engineering sciences and technology.

Graduates should qualify to obtain occupations such as technical service providers, materials and technologies testing services, process improvement technicians, engineering technicians, construction technicians and managers, industrial and technology managers, or research technicians.

PROGRAM DESCRIPTION

A course of study that prepares the students to use basic engineering principles and technical skills for installing, servicing, and maintaining computers, peripherals, networks, and microprocessor and computer controlled equipment. Includes instruction in mathematics, computer electronics and programming, prototype development and testing, systems installation and testing, solid state and microminiature circuitry, peripheral equipment, and report preparation. Graduates should qualify for employment opportunities in electronics technology, computer service, computer networks, server maintenance, programming, and other areas requiring knowledge of electronic and computer systems. Graduates may also qualify for certification in electronics, computers, or networks.

COURSE REQUIREMENTS

Richmond Community College provides day and evening course sequences for selected programs to enable students to better plan what courses to take to reach their educational goals. However, given the continued increase in the use of technology in instruction and increasing student demand for distance learning courses, the College may offer hybrid, online, web-based and information highway courses in place of traditional courses in any course sequence that is listed. Therefore, students should be aware of this possibility and prepare themselves to successfully function in a hybrid, online, web-based, or information highway course.

				Work/			
				Class	Lab	Clinical	Credit
A. General Education Courses							
1. Required Courses							
ENG	111	Writing and Inquiry		3	0	0	3
COM	231	Public Speaking		3	0	0	3
or							
ENG	112	Writing/Research in the Disciplines		3	0	0	3
MAT	171	Precalculus Algebra		3	2	0	4
		Humanities/Fine Arts Elective*		3	0	0	3
		Social/Behavioral Sciences Elective*		3	0	0	3

B. Major Courses

1. Core Courses

To receive a degree, diploma or certificate from RCC, a student must have a grade of "C" or better in all core courses for the program of study.

CSC	153	C# Programming	2	3	0	3
CTS	120	Hardware/Software Support	2	3	0	3
CTS	220	Advanced Hard/Software Support	2	3	0	3
ELC	131	Circuit Analysis I	3	3	0	4
ELN	131	Analog Electronics I	3	3	0	4
ELN	133	Digital Electronics	3	3	0	4
ELN	232	Introduction to Microprocessors	3	3	0	4
C. Other Major Courses						
ATR	112	Intro to Automation	2	3	0	3
CIS	115	Introduction to Programming & Logic	2	3	0	3
DFT	151	CAD I	2	3	0	3
EGR	285	Design Project	0	4	0	2
ELN	260	Prog Logic Controllers	3	3	0	4
MAT	172	Precalculus Trigonometry	3	2	0	4
NET	125	Introduction to Networks	1	4	0	3
NOS	120	Linux/Unix Single User	2	2	0	3
D. Other Required Courses						
ACA	122	College Transfer Success	0	2	0	1

Total Credit Hours**67**

*Approved Electives are listed on the page before the Course Descriptions.

**SEMESTER SCHEDULE
COMPUTER ENGINEERING TECHNOLOGY (DAY)**

			Work/			
			Class	Lab	Clinical	Credit
First Year – Fall Semester						
ACA	122	College Transfer Success	0	2	0	1
CIS	115	Introduction to Programming & Logic	2	3	0	3
CTS	120	Hardware/Software Support	2	3	0	3
ELC	131	Circuit Analysis I	3	3	0	4
ENG	111	Writing and Inquiry	3	0	0	3
MAT	171	Precalculus Algebra	3	2	0	4
			—	—	—	—
			13	13	0	18
First Year – Spring Semester						
CTS	220	Advanced Hard/Software Support	2	3	0	3
COM	231	Public Speaking	3	0	0	3
	or					
ENG	112	Writing/Research in the Disciplines	3	0	0	3
ELN	131	Analog Electronics I	3	3	0	4
ELN	133	Digital Electronics	3	3	0	4
MAT	172	Precalculus Trigonometry	3	2	0	4
			—	—	—	—
			14	11	0	18

Second Year – Fall Semester

DFT	151	CAD I	2	3	0	3
ELN	232	Introduction to Microprocessors	3	3	0	4
ELN	260	Prog Logic Controllers	3	3	0	4
NOS	120	Linux/Unix Single User	2	2	0	3
		Social/Behavioral Sciences Elective*	3	0	0	3
			—	—	—	—
			13	11	0	17

Second Year – Spring Semester

ATR	112	Intro to Automation	2	3	0	3
CSC	153	C# Programming	2	3	0	3
EGR	285	Design Project	0	4	0	2
NET	125	Introduction to Networks	1	4	0	3
		Humanities/Fine Arts Elective*	3	0	0	3
			—	—	—	—
			8	14	0	14

Total Credit Hours**67**

*Approved Electives are listed on the page before the Course Descriptions.

**COMPUTER ENGINEERING TECHNOLOGY (CERTIFICATE) (C40160)
COURSE REQUIREMENTS**

			Class	Lab	Work/ Clinical	Credit
CIS	115	Introduction to Programming & Logic	2	3	0	3
CTS	120	Hardware/Software Support	2	3	0	3
ELC	131	Circuit Analysis I	3	3	0	4
ELN	131	Analog Electronics I	3	3	0	4
ELN	133	Digital Electronics	3	3	0	4

Total Credit Hours**18**

Program Completion Guide
ASSOCIATE IN APPLIED SCIENCE - COMPUTER ENGINEERING TECHNOLOGY (A40160)

Student Name: _____ **ID #:** _____ **Date of Enrollment:** _____

Section I: Developmental Courses (if needed)

Courses	Scores	Cr.	Prerequisites/ Corequisites	Grade	Notes/Semester
DMA 010 Operations with Integers	<7 on DAP	1	Pre: None		
DMA 020 Fractions and Decimals	<7 on DAP	1	Pre: DMA 010		
DMA 030 Propor/Ratio/Rate/Percent	<7 on DAP	1	Pre: DMA 010-020		
DMA 040 Express/Lin Equat/Inequal	<7 on DAP	1	Pre: DMA 010-030 or MAT 060		
DMA 050 Graphs/Equations of Lines	<7 on DAP	1	Pre: DMA 010-040 or DMA 040 and MAT 060		
DMA 060 Polynomial/Quadratic Appl (Required if taking MAT 171)	<7 on DAP	1	Pre: DMA 010-050 or MAT 060 and MAT 070		
DMA 070 Rational Express/Equation (Required if taking MAT 171)		1	Pre: DMA 010-060 or MAT 060 and MAT 070		
DMA 080 Radical Express/Equations (Required if taking MAT 171)		1	Pre: DMA 010-070 or MAT 060 and MAT 070		
DRE 096 Integrated Reading and Writing	104-116	3	Pre: None		
DRE 097 Integrated Reading Writing II	117-135	3	Pre: DRE 096		
DRE 098 Integrated Reading Writing III	136-150	3	Pre: DRE 097		

Section II:

A. Computer Engineering Technology Certificate (C40160) Course Requirement 18 Credit hours: Complete Section I (as required) and Section II, A.

Courses	Cr.	Recommended Semester	Prerequisites/ Corequisites	Semester Registered/ Planned	Semester Completed/ Grade
CIS 115 Introduction to Programming & Logic	3	1 st year - fall	Pre: DMA 010-040 or MAT 080, DRE 097 Co: DRE 098		
CTS 120 Hardware/Software Support*	3	1 st year - fall	Pre: DMA 010-040 or MAT 070, DRE 097 Co: DRE 098		
ELC 131 Circuit Analysis I*	4	1 st year - fall	Pre: DMA 010-050 or MAT 070 Co: DRE 096		
ELN 131 Analog Electronics*	4	1 st year - spring	Pre: ELC 131		
ELN 133 Digital Electronics*	4	1 st year - spring	Pre: ELC 112 or ELC 131		

B. Computer Engineering Technology Associate in Applied Science Degree (A40160) Course Requirements 67 credit hours: Complete Section I (as required) and Section II, A and B.

Courses	Cr.	Recommended Semester	Prerequisites/ Corequisites	Semester Registered/ Planned	Semester Completed/ Grade
ACA 122 College Transfer Success	1	1 st year - fall	None		
ENG 111 Writing and Inquiry	3	1 st year - fall	Pre: DRE 098 or ENG 090 and RED 090 Co: ACA 122		
MAT 171 Precalculus Algebra	4	1 st year - fall	Pre: DMA 010-080 or MAT 080		
CTS 220 Advanced Hard/Software Support*	3	1 st year - spring	Pre: CTS 120		
COM 231 Public Speaking or ENG 112 Writing/Research in the Disciplines	3 3	1 st year - spring	Pre: DRE 098 or ENG 090 and RED 090 Pre: ENG 111		
MAT 172 Precalculus Trigonometry	4	1 st year - spring	Pre: MAT 171		
DFT 151 CAD I	3	2 nd year – fall	Pre: DMA 010-030 or MAT 060, DRE 097 or RED 080		
ELN 232 Introduction to Microprocessors*	4	2 nd year – fall	Pre: ELN 133		

ELN 260 Prog Logic Controllers	4	2 nd year – fall	Pre: ELC 131 Co: ELN 133		
NOS 120 Linux/Unix Singer User	3	2 nd year – fall	Pre: CET 211 or NOS 110		
ATR 112 Intro to Automation	3	2 nd year - spring	Pre: ELN 260		
CSC 153 C# Programming*	3	2 nd year – spring	Pre: CIS 115		
EGR 285 Design Project	2	2 nd year - spring	Pre: ELN 133, ELN 131, ELN 260		
NET 125 Introduction to Networks	3	2 nd year - spring	Pre: DMA 010-050 or MAT 070, DRE 097 Co: DRE 098		

Electives: (Must take one Humanities/Fine Arts and one Social/Behavioral Sciences elective from lists below unless a specific course is required above.)

Humanities/Fine Arts Electives (3 credits)** Courses with the following prefixes will satisfy this requirement: ART, DRA, ENG (literature courses only), HUM, MUS, PHI, REL, and SPA (Intermediate Spanish I only).			
Courses offered at RCC: ART 111, DRA 111, ENG 131, ENG 231, ENG 232, MUS 110, PHI 240, REL 211, REL 212, SPA 211			
Course	Recommended Semester	Semester Registered/Planned	Semester Completed/Grade
	2 nd year - spring		

Social/Behavioral Sciences Electives (3 credits)** (Courses with the following prefixes will satisfy this requirement: ANT, ECO+, GEO, HIS, POL, PSY, and SOC) +Some business and accounting curricula require economics and do not accept ECO courses as fulfillment of this elective requirement.)			
Courses offered at RCC: ANT 220, HIS 111, HIS 112, HIS 131, HIS 132, PSY 150, PSY 241, SOC 210, SOC 213			
Course	Recommended Semester	Semester Registered/Planned	Semester Completed/Grade
	2 nd year - fall		

NOTES: *All courses must be completed with a grade of "C" or better.
**See course catalog for prerequisite and/or corequisite requirements.

Students please read the following and sign below.

I understand that as an RCC student, I am ultimately responsible for my schedule. I understand that I must complete each course with a grade of "C" or better and follow the established course sequence or my ability to graduate on time may be affected.
My advisor has information regarding other colleges and transfer opportunities that I can investigate after completing my degree/diploma/certificate, and I understand that if I would like more information I can schedule an appointment with him/her.

Student Name: _____ Student Signature: _____ Date: _____

Advisor Name: _____ Advisor Signature: _____ Date: _____

Student Name: _____ Student Signature: _____ Date: _____

Advisor Name: _____ Advisor Signature: _____ Date: _____

Student Name: _____ Student Signature: _____ Date: _____

Advisor Name: _____ Advisor Signature: _____ Date: _____

Student Name: _____ Student Signature: _____ Date: _____

Advisor Name: _____ Advisor Signature: _____ Date: _____