the student will select their area of specialty, either the Non-Invasive or Invasive track.

In the fall term of the second year, the student will be enrolled in courses in their specialty tract.

In order to progress in this program, students must earn a grade of C or better in all curriculum courses.

Invasive/Non-invasive Track

All students enrolled in the Cardiovascular Technology program will take the same courses for the first year. At the end of the spring term of the first year, students will make a decision to take the invasive or non-invasive tract. The courses for the invasive are marked by an asterisk (*); the non-invasive courses are marked by a double asterisk (**) for the second year. All courses not marked by an asterisk both tracts must take.

Contact Information

The Cardiovascular Technology program is in the Nursing, Human Services and Health Education Division. For more information, call 704.330.6496 or 704.330.6285. The Cardiovascular Technology program Admission packet may be downloaded from the Cardiovascular Technology program webpage at the following: www.cpcc.edu/cvt

Note

All students enrolled in the Cardiovascular Technology program will take the same courses for the first year. At the end of the spring term of the first year, students will make a decision to take the invasive or non-invasive tract. In the fall term of the second year, the student will be enrolled in courses in their specialty tract. The courses for the invasive are marked by an asterisk (*); the non-invasive courses are marked by a double asterisk (**) for the second year. All courses not marked by an asterisk both tracts must take.

In order to participate in clinical education experiences at health care facilities, students may be required to submit results of a NC state or national criminal background check at their own expense. As a condition of program admission, students may be required to verify that they are United States citizens or are otherwise legally authorized residents of the United States.

Major and Related Course Requirements

	Class	Lab	Hours Clinical	Work Exper.	Credits
ICT 114 Intro Cardiovascular Tech	3	0	0	0	3
ICT 134 CV Anatomy and Physiology	2	0	0	0	2
ICT 136 Cardiac Cath I	3	2	3	0	5
*ICT 214 Cardiac Cath II	3	2	12	0	8
*ICT 234 Cardiac Cath III	2	0	30	0	12
NCT 113 Electrocardiography	2	2	0	0	3
NCT 133 Noninvasive Cardiovascular Fundamentals	2	2	0	0	3
NCT 143 Echocardiography I	3	3	3	0	5
**NCT 251 Echocardiography II	2	2	12	0	7
**NCT 253 Hemodynamic Echo Prin	2	2	0	0	3
**NCT 273 Echocardiography III	2	0	30	0	12
BIO 163 Basic Anatomy and Physiology	4	2	0	0	5
CHM 130 General Organic and Biochemistry	3	0	0	0	3
CHM 130A General Organic and Biochemistry Lab	0	2	0	0	1
PHY 110 Conceptual Physics	3	0	0	0	3
PHY 110A Conceptual Physical Lab	0	2	0	0	1
MED 120 Survey of Medical Terminology	2	0	0	0	2

General Education Core Requirements

ENG 111 Expository Writing	3	0	0	0	3
ENG 114 Professional Research and Writing	3	0	0	0	3
MAT 161 College Algebra	3	0	0	0	3
PSY 150 General Psychology	3	0	0	0	3
COM 231 Public Speaking	3	0	0	0	3

Students must choose a minimum of 3 credit hours from the list of approved humanities courses listed at end of this section of the catalog.

Total Credit Hours:

—Invasive Tract 74

—Non-Invasive Tract 76

Civil Engineering Technology (A40140)

The Civil Engineering Technology curriculum provides the application of relevant theory of engineering needed by technicians to carry out planning and supervisory tasks in the construction of transportation systems, residential and commercial buildings, bridges, dams, and water and wastewater treatment systems.

Coursework includes the communication and computational skills required to support the fields such as materials testing, structures, estimating, project management, hydraulics, environmental technology, and surveying. Additional coursework will cover the operation of computers and application software including computer-aided drafting.

Graduates should qualify for technician level jobs with both public and private engineering, construction, and surveying agencies.

Degree Awarded

The Associate in Applied Science Degree - Civil Engineering Technology will be awarded by the College upon completion of this program.

Admissions

- A high school diploma or equivalent is required.
- CPCC placement tests are required in English and mathematics. Developmental classes in mathematics and English courses are available for students to build basic skills and knowledge.
- A counseling/orientation appointment follows placement testing.
- Students entering this program should take the courses in bold print first if at all possible.
- Students should see a faculty advisor before registration.
- Many courses have prerequisites or corequisites; check the Course Descriptions section for details.

Additional Information

Contact Information

Civil Engineering Technology is in the Engineering Technologies Division. For more information, call 704.330.6578 or visit our web site at www.cpcc.edu/civil_surveying.

Note

Students who do not take program-related courses for a one-year period must reenter the program under the Catalog in effect at the time of reentry.

Major and Related Course Requirements

	Class	Lab	Hours Clinical	Work Exper.	Credits
CIS 111 Basic PC Literacy	1	2	0	0	2
CIV 111 Soils and Foundations	2	3	0	0	3
CIV 210 Engineering Materials	1	3	0	0	2
CIV 211 Hydraulics and Hydrology	2	3	0	0	3
CIV 110 Statics/Strength of Materials	2	6	0	0	4
OR					
MEC 250 Statics & Strength of Materials	4	3	0	0	5
CIV 125 Civil/Surveying CAD	1	6	0	0	3
CIV 221 Steel and Timber Design	2	3	0	0	3
CIV 222 Reinforced Concrete	2	3	0	0	3
CIV 230 Construction Estimating	2	3	0	0	3
CIV 240 Project Management	2	3	0	0	3
EGR 115 Intro to Technology	2	6	0	0	3
SRV110 Surveying I	2	6	0	0	4
SRV 111 Surveying II	2	6	0	0	4
EGR 115A Intro. to Tech. Lab	0	3	0	0	1
					48
Technical Electives: Select 7 SHC from the list below.					
CIS 115 Introduction to Programming and Logic	2	2	0	0	3
CIS 152 Database Concepts and Applications	2	2	0	0	3
CIV 212 Environmental Planning	2	3	0	0	3
CIV 215 Highway Technology	1	3	0	0	2
CIV 250 Civil Tech Project	1	3	0	0	2
COE 112 Co-op Work Experience I	0	0	0	20	2
MAT 223 Applied Calculus	2	2	0	0	3
PHY 132 Physics-Elec & Magnetism	3	2	0	0	4
PHY 152 College Physics II	3	2			4
General Education Core Requirements					
ENG 111 Expository Writing	3	0	0	0	3
ENG 113 Literature-Based Research	3	0	0	0	3
OR					
ENG 114 Professional Research and Reporting	3	0	0	0	3
COM 231 Public Speaking					
OR					
COM 110 Intro to Communication	3	0	0	0	3
MAT 121 Algebra/Trigonometry I	2	2	0	0	3
MAT 122 Algebra/Trigonometry II	2	2	0	0	3
PHY 131 Physics-Mechanics	3	2	0	0	4
OR					
PHY 151 College Physics I	3	2			4
Students must choose a minimum of three (3) credit hours from the list of approved humanities courses listed at the end of this section of the catalog.	3	0	0	0	3
Students must choose a minimum (3) credit hours from the list of approved behavioral and social sciences courses listed at the end of this section of the catalog.	3	0	0	0	3
					25
Total Credit Hours					**73**

Civil Engineering Technology Certificates (C40140)

Civil Engineering Technology Certificate with a Specialization In Construction Materials Testing (C40140-C1)

This certificate prepares individuals to enter the Materials Testing Career in the Construction Industry.

Major and Related Course Requirements

	Class	Lab	Hours Clinical	Work Exper.	Credits
EGR 115A Intro. to Tech. Lab	0	3	0	0	1
CIS 111 Basic PC literacy	1	2	0	0	2
EGR 115 Intro to Technology	2	6	0	0	3
MAT 121 Algebra/Trigonometry I	2	2	0	0	3
CIV 110 Statics/Strength of Materials	2	6	0	0	4
CIV 111 Soils and Foundations	2	3	0	0	3
CIV 210 Engineering Materials	1	3	0	0	2
Total Credit Hours					**18**

Civil Engineering Technology Certificate with a Specialization In Project Supervision (C40140-C2)

Major and Related Course Requirements

	Class	Lab	Hours Clinical	Work Exper.	Credits
EGR 115A Intro. to Tech. Lab	0	3	0	0	1
CIS 111 Basic PC literacy	1	2	0	0	2
MAT 121 Algebra/Trig. I	2	2			3
EGR 115 Intro to Technology	2	6	0	0	3
CIV 230 Construction Estimating	2	3	0	0	3
CIV 240 Project Management	2	3	0	0	3
Total Credit Hours					**15**

Computer Engineering Technology (A40160)

The Computer Engineering Technology curriculum provides the skills required to install, service, and maintain computers, peripherals, networks, and microprocessor and computer controlled equipment. It includes training in both hardware and software, emphasizing operating systems concepts to provide a unified view of computer systems.

Course work includes mathematics, physics, electronics, digital circuits and programming, with emphasis on the operation, use, and interfacing of memory and devices to the CPU. Additional topics may include communications, networks, operating systems, programming languages, Internet configuration and design, and industrial applications.

Graduates should qualify for employment opportunities in electronics technology, computer service, computer networks, server maintenance, programming, and other areas requiring a knowledge of electronic and computer systems. Graduates may also qualify for certification in electronics, computers, or networks.

Degree Awarded

The Associate in Applied Science Degree - Computer Engineering Technology is awarded by the College upon completion of this program.

Admissions

- A high school diploma or equivalent is required. High school students preparing for an Engineering Technology program should complete courses in algebra, geometry, and advanced mathematics. Skills and proficiencies should be developed in writing, computer literacy, and science.