

PHY 110 Conceptual Physics	3	0	0	0	3
PHY 110A Conceptual Physics Lab	0	2	0	0	1
MEC 172 Introduction to Metallurgy	2	2	0	0	3
Technical Electives					3
(Select 3 hours from the following courses)					34
COE 111 Co-op Work Experience I	0	0	0	10	1
COE 112 Co-op Work Experience I	0	0	0	20	2
COE 121 Co-op Work Experience 2	0	0	0	10	1
COE 122 Co-op Work Experience 2	0	0	0	20	2
ATR 112 Introduction to Automation	2	3	0	0	3
ISC 132 Manufacturing Quality Control	2	3	0	0	3
MEC 265 Fluid Mechanics	2	2	0	0	3
MEC 293 Selected Topics in Mechanical Engineering Technology	2	2	0	0	3
ISC 211 Production Planning	2	2			3
EGR 285 Design Project	0	4	0	0	2
General Education Core Requirements					
ENG 111 Expository Writing	3	0	0	0	3
MAT 115 Mathematical Models	3	0	0	0	3
					6
Total Credit Hours					40

Mechanical Drafting Technology Certificates (C50340)

Mechanical Drafting Technology Certificate with a Specialization in Mechanical CAD Operations (C50340-C1)

This certificate provides for study in the use of CAD software as a drafting tool. Coursework includes manual drafting, advanced training using CAD to produce 2-dimensional and 3-dimensional drawings, and dimensioning and tolerancing techniques. Coursework will apply toward the Mechanical Drafting Technology diploma program.

Certificate Awarded

A Certificate is awarded in Mechanical CAD Operations upon completion of this program.

Admissions

- Completion of a high school diploma or equivalent is encouraged as a foundation for a career in this area.
- Individuals entering this certificate program should have a basic understanding of technical drawing or reading blueprints.
- Many courses have prerequisites; see the Course Descriptions section for details.

Additional Information

Contact Information

The Mechanical Drafting Program is in the Engineering Technologies Division. For more information, call 704.330.6553.

Major and Related Course Requirements

	Class	Lab	Hours Clinical	Work Exper.	Credits
DDF 221 Design Drafting Project	0	4	0	0	2
DFT 111 Technical Drafting 1	1	3	0	0	2
DFT 112 Technical Drafting 2	1	3	0	0	2
DFT 121 Introduction to Geometric Dimensioning and Tolerancing	1	2	0	0	2
DFT 151 CAD 1	2	3	0	0	3

DFT 154 Intro. Solid Modeling	2	3	0	0	3
Total Credit Hours					14

Mechanical Engineering Technology (A40320)

The Mechanical Engineering Technology curriculum prepares graduates for employment as technicians in three diversified mechanical and manufacturing engineering fields. Mechanical Engineering technicians assist in design, development, testing, process design and improvement, and troubleshooting and repair of engineered systems. Emphasis is placed on the integration of theory and hands-on application of engineering principles.

In addition to course work in engineering graphics, engineering fundamentals, materials and manufacturing processes, mathematics, and physics, students will study computer applications, critical thinking, planning and problem solving, and oral and written communications.

Graduates of the curriculum will find employment opportunities in the manufacturing or service sectors of engineering technology. Engineering technicians may obtain professional certification by application to organizations such as ASQC, SME, and NICET.

Degree Awarded

The Associate in Applied Science Degree - Mechanical Engineering Technology is awarded by the College upon completion of this program. This degree is accepted at some colleges and universities as the first two years of a 2 + 2 bachelor's-level engineering technology program.

Admissions

- A high school diploma or equivalent is required. High schools 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.
- Placement tests in English and mathematics determine the entry-level courses that match individual needs. Developmental Studies English and mathematics courses are available for students to build basic skills and knowledge.
- A counseling/orientation appointment follows placement testing.
- Many courses have prerequisites or corequisites; check the Course Descriptions section for details.

Additional Information

Program Accreditation

The Mechanical Engineering Technology Program at CPCC is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

Notes

The Mechanical Engineering Technology curriculum at Central Piedmont Community College features extensive use of CAD/CAM systems in the practical applications of both fundamental and highly specialized mechanical engineering technology principles. Students advance from basic courses to specialized mechanical engineering technology courses that furnish concentrated study in the practical application of state-of-the-art technological knowledge and skills needed in today's high technology industry.

Two curriculum tracks are available: the Mechanical Design track and the Manufacturing Support track. The Mechanical Design Track is structured to enable the graduate to work in

conjunction with mechanical engineers in the selection of mechanical components. The Manufacturing Support Track is design to enable the graduate work in liaison with manufacturing engineers in support of a production facility.

Completion of the program requires that students use college-level algebra, trigonometry, and physics in the application of scientific principles to technical problems.

Contact Information

The Mechanical Engineering Technology Program is in the Engineering Technologies Division. For more information, call 704.330.6553.

Major and Related Course Requirements

	Class	Lab	Hours Clinical	Work Exper.	Credits
DFT 121 Intro. to Geo. dim. & Tol.	1	2	0	0	2
DFT 154 Intro. Solid Modeling	2	3	0	0	3
EGR 120 Engineering and Design Graphics	2	2	0	0	3
EGR 125 Computer Apps. for Technicians	1	2	0	0	2
ISC 112 Industrial Safety	2	0	0	0	2
ISC 212 Metrology	1	2	0	0	2
MAT 122 Algebra/Trigonometry 2	2	2	0	0	3
MAT 223 Applied Calculus	2	2	0	0	3
MEC 111 Machine Processes	1	4	0	0	3
MEC 161 Manufacturing Processes	3	0	0	0	3
MEC 180 Engineering Materials	2	3	0	0	3
MEC 250 Statics and Strength of Materials	4	3	0	0	5
MEC 265 Fluid Mechanics	2	2	0	0	3
MEC 267 Thermal Systems	2	2	0	0	3
MEC 270 Machine Design	3	3	0	0	4
MEC 275 Engineering Mechanisms	2	2	0	0	3
PHY 131 Physics-Mechanics	3	2	0	0	4
PHY 132 Physics-Electricity and Magnetism	3	2	0	0	4
Technical Electives (3 credit hours to be selected from the following courses)					58
COE 111E Co-op Work Experience I	0	0	0	10	1
COE 112E Co-op Work Experience I	0	0	0	20	2
COE 121E Co-op Work Experience 2	0	0	0	10	1
COE 122E Co-op Work Experience 2	0	0	0	20	2
ATR 112 Intro. to Automation	2	3	0	0	3
CIS 115 Intro. to Programming and Logic	2	2	0	0	3
CSC 139 Visual BASIC Programming	2	2	0	0	3
DDF 252 Advanced Solid Modeling	2	2	0	0	3
ELC 111E Intro. to Electricity	2	2	0	0	3
ISC 132 Manufacturing Quality Control	2	3	0	0	3
ISC 211 Production Planning	2	2	0	0	3
MEC 293 Selected Topics in Mech. Engineering Tech.					1-3
PLA 110 Intro. to Plastics	2	0	0	0	2

**Major and Related Course Requirements—
Manufacturing Support Track**

	Class	Lab	Hours Clinical	Work Exper.	Credits
ATR 112 Intro. to Automation	2	3	0	0	2
DFT 121 Intro. to Geo. Dim. Tol.	1	2	0	0	2
EGR 120 Engineering and Design Graphics	2	2	0	0	3
EGR 125 Computer Apps. for Technicians	1	2	0	0	2
ELC 111E Intro. to Electricity	2	2	0	0	3
ISC 112 Industrial Safety	2	0	0	0	2
ISC 132 Mfg. Quality Control	2	0	0	0	2
ISC 211 Production Planning	2	2	0	0	3
ISC 212 Metrology	1	2	0	0	2
MAT 122 Algebra/Trigonometry 2	2	2	0	0	3
MAT 223 Applied Calculus	2	2	0	0	3
MEC 111 Machine Processes	1	4	0	0	3
MEC 161 Manufacturing Processes	3	0	0	0	3
MEC 180 Engineering Materials	2	3	0	0	3
MEC 250 Statics and Strength of Materials	4	3	0	0	5
MEC 265 Fluid Mechanics	2	2	0	0	3
PHY 131 Physics-Mechanics	3	2	0	0	4
PHY 132 Physics-Electricity and Magnetism	3	2	0	0	4
Technical Electives (3 credit hours to be selected from the following courses)					57
COE 111E Co-op Work Experience I	0	0	0	10	1
COE 112E Co-op Work Experience I	0	0	0	20	2
COE 121E Co-op Work Experience 2	0	0	0	10	1
COE 122E Co-op Work Experience 2	0	0	0	20	2
CIS 115 Intro. to Programming and Logic	2	2	0	0	3
CSC 139 Visual BASIC Programming	2	2	0	0	3
DFT 154 Intro. to Solid Modeling	2	3	0	0	3
MEC 267 Thermal Systems	2	2	0	0	3
MEC 270 Machine Design	3	3	0	0	4
MEC 275 Engineering Mechanisms	2	2	0	0	3
MEC 293 Selected Topics in Mech. Engineering Tech					1-3
PLA 110 Introduction to Plastics	2	0	0	0	2
General Education Core Requirements					
ENG 111 Expository Writing	3	0	0	0	3
ENG 114 Professional Research and Reporting	3	0	0	0	3
MAT 121 Algebra/Trigonometry 1	2	2	0	0	3
COM 110 Intro. to Communication	3	0	0	0	3
Students must choose a minimum of 3 credit hours from the list of approved humanities courses listed at the end of this section of the catalog:					3
Students must choose a minimum of 3 credit hours from the list of approved behavioral and social sciences courses listed at the end of this section of the catalog:					3
Total Credit Hours					75-76

**Mechanical Engineering Technology
Diplomas (D40320)**

Concepts of Mechanical Design Diploma (D40320-D1)

Major and Related Course Requirements

	Class	Lab	Hours Clinical	Work Exper.	Credits
DFT 121 Intro. to Geo. Dim. & Tol.	1	2	0	0	2
DFT 154 Intro Solid Modeling	2	3	0	0	3
EGR 120 Engineering and Design Graphics	2	2	0	0	3
EGR 125 Computer Apps. for Technicians	1	2	0	0	2
ISC 112 Industrial Safety	2	0	0	0	2
ISC 132 Mfg. Quality Control	2	0	0	0	2
ISC 212 Metrology	1	2	0	0	2
MEC 111 Machine Processes	1	4	0	0	3
MEC 161 Manufacturing Processes	3	0	0	0	3
MEC 265 Fluid Mechanics	2	2	0	0	3
PHY 131 Physics-Mechanics	3	2	0	0	4
					30

General Education Core Requirements

ENG 111 Expository Writing	3	0	0	0	3
MAT 121 Algebra/Trigonometry 1	2	2	0	0	3
Total Credit Hours					36

Concepts of Manufacturing Support Diploma (D40320-D2)

Major and Related Course Requirements

	Class	Lab	Hours Clinical	Work Exper.	Credits
ATR 112 Intro. to Automation	2	3	0	0	3
DFT 121 Intro. to Geo. Dim. & Tol.	1	2	0	0	2
EGR 120 Engineering and Design Graphics	2	2	0	0	3
EGR 125 Computer Apps for Technicians	1	2	0	0	2
ELC 111E Intro. to Electricity	2	2	0	0	2
ISC 112 Industrial Safety	2	0	0	0	2
ISC 132 Manufacturing Quality Control	2	3	0	0	3
ISC 211 Production Planning	2	2	0	0	3
ISC 212 Metrology	1	2	0	0	2
MEC 111 Machine Processes	1	4	0	0	3
MEC 161 Manufacturing Processes	3	0	0	0	3
MEC 265 Fluid Mechanics	2	2	0	0	3
PHY 131 Physics-Mechanics	3	2	0	0	4
					36

General Education Core Requirements

ENG 111 Expository Writing	3	0	0	0	3
MAT 121 Algebra/Trigonometry 1	2	2	0	0	3
Total Credit Hours					42

Medical Assisting (A45400)

The Medical Assisting curriculum prepares multi-skilled health care professionals qualified to perform administrative, clinical, and laboratory procedures.

Course work includes instruction in scheduling appointments, coding and processing insurance accounts, billing, collections, medical transcription, computer operations; assisting with examinations/treatments, performing routine laboratory procedures, electrocardiography, supervised medication administration; and ethical/legal issues associated with patient care.

Advanced credits can be awarded toward completion of requirements for an Associate of Applied Science Degree in Medical Assisting. Individuals desiring a career in Medical

Assisting should, if possible, take biology, mathematics, key-boarding, and computer courses prior to entering the program. Students are admitted to the Medical Assisting program Fall, Spring and Summer semesters.

Degree Awarded

A Degree in Medical Assisting is awarded by the college upon completion of the degree requirements.

Admissions

- Complete a CPCC application.
- Submit high school transcripts as well as any college transcripts (if applicable).
- Take required placement tests.
- Complete any required Developmental classes with a C or better.
- Present evidence of good physical and mental health.
- Many courses have prerequisites or corequisites; check the Course Descriptions section for details.
- The student must provide a certificate of health insurance and accident insurance during MED 112, MED 140, MED 150, MED 260, and MED 276.
- Students must demonstrate word processing proficiency including keying (typing) at an acceptable speed with accurate level and document formatting. Typing speed required is at least 30 wpm. If a student cannot demonstrate word processing proficiency, OST 131 is required.
- Students must demonstrate basic computer competencies through coursework or testing. The division director of Computer Office and Information Systems will determine equivalence and competencies. CIS 110 or CIS 111 is required if coursework is needed to demonstrate competencies.

Additional Information

Notes

- ACA 118 College Study Skills is highly recommended before or with entrance in the Medical Assisting program.
- Progression in this program is dependent on satisfying course prerequisites, corequisites, and maintaining a grade of C or better for all courses in the curriculum.
- Students must have current CPR Certification prior to the externship (MED 260).
- In addition to tuition, lab fees, and textbooks, this program has additional costs that include uniforms, lab coats, personal protective equipment, physical examination including immunizations and drug screening, and a CPCC Medical Assisting pin.
- 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.

Contact Information

The Medical Assisting Program is in the Health Sciences Division. For more information, call 704.330.6483.

Major and Related Course Requirements

	Class	Lab	Hours Clinical	Work Exper.	Credits
MED 110 Orientation to Medical Assisting	1	0	0	0	1
MED 112 Orientation to Clinic Setting	0	0	3	0	1

MED 118 Medical Law and Ethics	2	0	0	0	2
MED 121 Medical Terminology I	3	0	0	0	3
MED 122 Medical Terminology II	3	0	0	0	3
MED 130 Administrative Office Procedures I	1	2	0		2
MED 131 Administrative Office Procedures II	1	2	0		2
MED 134 Medical Transcription	2	2	0	0	3
MED 138 Infection/Hazard Control	2	0	0	0	2
MED 140 Exam Room Procedure I	3	4	0	0	5
MED 150 Laboratory Procedure I	3	4	0	0	5
MED 260 Medical Clinical Externship	0	0	15	0	5
MED 116 Introduction to Anatomy and Physiology	3	2	0	0	4
MED 114 Professional Interaction in Health Care	1	0	0	0	1
MED 276 Patient Education	1	2	0	0	2
MED 262 Clinical Perspectives	1	0	0	0	1
General Education Core Requirements					
ENG 111 Expository Writing	3	0	0	0	3
MAT 115 Mathematical Models	2	2	0	0	3
Total Credit Hours					48
After completion of the diploma program, requirements for A.A.S. Degree program are as follows:					
MED 270 Symptomatology	2	2	0	0	3
MED 272 Drug Therapy	3	0	0	0	3
MED 274 Diet Therapy/Nutrition	3	0	0	0	3
OR					
MED 232 Medical Insurance Coding	1	3	0	0	2
BUS 137 Principles of Management					
OR					
BUS 135 Principles of Supervision	3	0	0	0	3
Students must choose a minimum of 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 of 3 credit hours from the list of approved behavioral and social sciences courses listed at the end of this section of the catalog:					
ENG 114 Professional Research & Reporting	3	0	0	0	3
COM 231 Public Speaking					
OR					
COM 110 Introduction to Communication					
OR					
COM 120 Interpersonal Communication	3	0	0	0	3
Total Credit Hours					72

Medical Assisting Diploma (D45400)

The Medical Assisting curriculum prepares multi-skilled health care professionals qualified to perform administrative, clinical, and laboratory procedures.

Course work includes instruction in scheduling appointments, coding and processing insurance accounts, billing, collections, medical transcription, computer operations; assisting with examinations/treatments, performing routine laboratory procedures, electrocardiography, supervised medication administration; and ethical/legal issues associated with patient care.

Graduates of CAAHEP accredited medical assisting programs may be eligible to sit for the American Association of Medical Assistants' Certification Examination to become Certified Medical Assistants. Employment opportunities include

physicians' offices, health maintenance organizations, health departments, and hospitals.

Advanced credits can be awarded toward completion of requirements for an Associate of Applied Science Degree in Medical Assisting. Individuals desiring a career in Medical Assisting should, if possible, take biology, mathematics, keyboarding, and computer courses prior to entering the program. Students are admitted to the Medical Assisting program Fall, Spring and Summer semesters.

Diploma Awarded

A Diploma in Medical Assisting is awarded by the college upon completion of the diploma requirements. Graduates of this CAAHEP Accredited program may apply to take the certification examination administered by the Certifying Board of the American Association of Medical Assistants. Credits from this program can be applied toward requirements for the Associate of Applied Science Degree in Medical Assisting.

Admissions

- Complete a CPCC application.
- Submit high school transcripts as well as any college transcripts (if applicable).
- Take required placement tests.
- Complete any required Developmental classes with a C or better.
- Present evidence of good physical and mental health.
- Many courses have prerequisites or corequisites; check the Course Descriptions section for details.
- The student must provide a certificate of health insurance and accident insurance during MED 112, MED 140, MED 150, MED 260, and MED 276.
- Students must demonstrate word processing proficiency including keying (typing) at an acceptable speed with accurate level and document formatting. Typing speed required is at least 30 wpm. If a student cannot demonstrate word processing proficiency, OST 131 is required.
- Students must demonstrate basic computer competencies through coursework or testing. The division director of Computer Office and Information Systems will determine equivalence and competencies. CIS 110 or CIS 111 is required if coursework is needed to demonstrate competencies.

Additional Information

Program Accreditation

The Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Curriculum Review Board of the American Association of Medical Assistants Endowment (AAMAE).

Notes

- ACA 118 College Study Skills is highly recommended before or with entrance in the Medical Assisting program.
- Progression in this program is dependent on satisfying course prerequisites, corequisites, and maintaining a grade of C or better for all courses in the curriculum.
- Students must have current CPR Certification prior to the externship (MED 260).
- In addition to tuition, lab fees, and textbooks, this program has additional costs that include uniforms, lab coats, personal protective equipment, physical examination including immunizations and drug screening, application fees for sitting for the Certification Exam, and a CPCC Medical Assisting pin.