

## Engineering Technologies

### Computer Engineering Technology

#### Credential: Associate in Applied Science Degree in Computer Engineering Technology A4016000

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.

Entrance Standards: See General Admission Standards on page 7 (Gen. Info section).

Academic Standards: See General Academic Standards on page 18 (Gen. Info section).

Program Length: 5 semesters.

Career Pathway Options: Associate of Applied Science Degree in Computer Engineering Technology.

Program Sites: Lee Campus - Day

#### Course Requirements for Computer Engineering Technology Degree

##### A. General Education (16 SHC)

ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
ENG 114	Prof Research & Reporting	3-0-3
MAT 121	Algebra/Trigonometry I	2-2-3
	Humanities Elective	3-0-3
	Social Science Elective	3-0-3

##### B. Required Major Core Courses (19 SHC)

CET 111	Computer Upgrade/Repair I	2-3-3
CSC 134	C++ Programming	2-3-3
ELC 131	DC/AC Circuit Analysis	4-3-5
ELN 131	Electronic Devices	3-3-4
ELN 133	Digital Electronics	3-3-4

##### C. Other Major Hours Required for Graduation (32 SHC)

CET 211	Computer Upgrade/Repair II	2-3-3
CET 225	Digital Signal Processing	2-2-3
CIS 110	Intro to Computers	2-2-3
ELN 232	Intro to Microprocessors	3-3-4
ELN 233	Microprocessor Systems	3-3-4
ELN 275	Troubleshooting	1-3-2

MAT 122	Algebra/Trigonometry II	2-2-3
NET 110	Networking Concepts	2-2-3
NOS 110	Operating Systems Concepts	2-2-3
PHY 131	Physics: Mechanics	3-2-4
	Technical Electives	5

Technical Electives may be selected from the following courses: (5/6 SHC)

CSC 139	Visual BASIC Programming	2-3-3
CSC 151	JAVA Programming	2-3-3
ELN 234	Communications Systems	3-3-4
ELN 247	Electronics Application Proj.	1-3-2
NET 125	Networking Basics	1-4-3
NET 126	Routing Basics	1-4-3
NOS 120	Linux/UNIX Single User	2-2-3
NOS 130	Windows Single User	2-2-3

Total Semester Hours Credit in Program: 72

#### Semester Curriculum for Computer Engineering Technology Degree

##### 1st Semester (Fall)

	C-L-SHC	
CIS 110	Introduction to Computers	2-2-3
ELC 131	DC/AC Circuit Analysis	4-3-5
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
MAT 121	Algebra/Trigonometry I	2-2-3
NET 110	Networking Concepts	2-2-3

13-11-18

##### 2nd Semester (Spring)

ELN 131	Electronic Devices	3-3-4
ELN 133	Digital Electronics	3-3-4
MAT 122	Algebra/Trigonometry II	2-2-3
NOS 110	Operating Systems Concepts	2-2-3
PHY 131	Physics-Mechanics	3-2-4

13-12-18

##### 3rd Semester (Summer)

CSC 134	C++ Programming	2-3-3
ENG 114	Prof Research & Reporting	3-0-3
		5-3-6

##### 4th Semester (Fall)

CET 111	Computer Upgrade/Repair I	2-3-3
ELN 232	Intro. to Microprocessors	3-3-4
	Social Science Elective	3-0-3
	Technical Elective	3

12-12-13

##### 5th Semester (Spring)

CET 211	Computer Upgrade/Repair II	2-3-3
ELN 233	Microprocessor Systems	3-3-4
ELN 275	Troubleshooting	1-3-2
	Humanities Elective	3-0-3
	Technical Elective	3

11-11-15

Total Semester Hours Credit: 72

**Electronics Engineering Technology**  
**Credential: Associate in Applied Science Degree**  
**in Electronics Engineering Technology**  
**A4020000**

Major Elective

6

This curriculum prepares individuals to become technicians who design, build, install, test, troubleshoot, repair, and modify developmental and production electronic components, equipment, and systems such as industrial/computer controls, manufacturing systems, telecommunication systems, and power electronic systems.

A broad-based core of courses, including basic electricity, solid-state fundamentals, digital concepts and microprocessors ensures the student will master the competencies necessary to perform entry-level tasks. Emphasis is placed on developing the student's ability to think, analyze, and troubleshoot.

Graduates should qualify for employment as engineering assistants or electronic technicians with job titles including electronic engineering associate, electronic engineering technician, field service technician, maintenance technician, electronic tester, electronic systems integrator, bench technician, and production control technician.

Entrance Standards: See General Admission Standards on page 7 (Gen. Info section).

Academic Standards: See General Academic Standards on page 18 (Gen. Info section).

Program Length: 5 semesters

Career Pathway Options: Associate in Applied Science Degree in Electronics Engineering Technology

Program Sites: Lee Campus - Day Program

**Course Requirements for Electronics Engineering Technology**

A. General Education Courses (16 SHC)		C-L-SHC
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
ENG 114	Prof Research & Reporting	3-0-3
MAT 121	Algebra/Trigonometry I	2-2-3
	Humanities Elective	3-0-3
	Social Science Elective	3-0-3

B. Required Major Core Courses (17 SHC)		
ELC 131	DC/AC Circuit Analysis	4-3-5
ELN 131	Electronic Devices	3-3-4
ELN 133	Digital Electronics	3-3-4
ELN 232	Intro. to Microprocessors	3-3-4

C. Other Major Hours Required for Graduation (43 SHC)		
CIS 110	Intro to Computers	2-2-3
EGR 131	Intro. to Electronics Tech.	1-2-2
ELC 127	Software for Technicians	1-3-2
ELN 132	Linear IC Applications	3-3-4
ELN 233	Microprocessor Systems	3-3-4
ELN 234	Communications Systems	3-3-4
ELN 247	Electronic Appl. Project	1-3-2
ELN 275	Troubleshooting	1-3-2
ISC 221	Statistical Quality Control	3-0-3
MAT 122	Algebra/Trigonometry II	2-2-3
PHY 131	Physics - Mechanics	3-2-4
PHY 133	Physics-Sound & Light	3-2-4

Major Elective Course Listing (Select 6 SHC)		
CET 111	Computer Upgrade/Repair I	2-3-3
CET 225	Digital Signal Processing	2-2-3
CSC 134	C++ Programming	2-3-3
CSC 151	JAVA Programming	2-3-3
DFT 151	CAD I	2-3-3
ELC 128	Intro to PLC's	2-3-3
ELC 213	Instrumentation	3-2-4
ELN 236	Fiber Optics and Lasers	3-2-4
NET 110	Networking Concepts	2-2-3
NOS 110	Operating Systems Concepts	2-2-3

Total Semester Hours Credit Required for Graduation: 76

**Semester Curriculum for Electronics Engineering Technology Degree**

**1st Semester (Fall)**

C-L-SHC		
CIS 110	Intro to Computers	2-2-3
EGR 131	Intro to Electronics Tech.	1-2-2
ELC 131	DC/AC Circuit Analysis	4-3-5
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
MAT 121	Algebra/Trigonometry I	2-2-3
		12-11-17

**2nd Semester (Spring)**

ELC 127	Software for Technicians	1-3-2
ELN 131	Electronic Devices	3-3-4
ELN 133	Digital Electronics	3-3-4
MAT 122	Algebra/Trigonometry II	2-2-3
PHY 131	Physics - Mechanics	3-2-4
		12-13-17

**3rd Semester (Summer)**

ELN 132	Linear IC Applications	3-3-4
PHY 133	Physics-Sound & Light	3-2-4
		6-5-8

**4th Semester (Fall)**

ELN 232	Intro to Microprocessors	3-3-4
ELN 234	Communications Systems	3-3-4
ENG 114	Prof Research & Reporting	3-0-3
	Social Science Elective	3-0-3
	Major Elective	3
		14-9-17

**5th Semester (Spring)**

ELN 233	Microprocessor Systems	3-3-4
ELN 247	Electronic App. Project	1-3-2
ELN 275	Troubleshooting	1-3-2
ISC 221	Statistical Quality Control	3-0-3
	Humanities Elective	3-0-3
	Major Elective	3
		11-9-17

Total Semester Hours Credit: 76

**Electronics Engineering Technology**  
**Credential: Certificate in Electronics**  
**Technology**  
**C4020000**

This curriculum prepares individuals to work as skilled assemblers, inspectors, or testers in consumer or industrial electronics environments. Work tasks include mounting, soldering, and wiring of electronics components, assembling sub-units, and final assembly and inspection of complete systems. Course work includes basic electricity, mathematics, solid-state electronics, and basic assembly skills. Graduates should qualify for employment as an electronics assembler, electronics tester, or electronics inspector.

Entrance Standards: See General Admission Standards on page 7 (Gen. Info section).

Academic Standards: See General Academic Standards on page 18 (Gen. Info section)

Program Length: 3 semesters

Career Pathway Options: Associate in Applied Science Degree in Electronics Engineering Technology; Certificate in Electronics Technology

Program Sites:

Lee Campus - Day Program

Harnett Campus – Day Program

Online Program

**Course Requirements for Electronics Technology Certificate**

A. General Education Courses (3 SHC)		C-L-SHC
MAT 121	Algebra/Trigonometry I	2-2-3
B. Required Major Core Courses (9 SHC)		
ELC 131	DC/AC Circuit Analysis	4-3-5
ELN 131	Electronic Devices	3-3-4
C. Other Major Hours Required for Graduation (6 SHC)		
EGR 131	Intro. To Electronics Tech.	1-2-2
ELN 132	Linear IC Applications	3-3-4

Total Semester Hours Credit Required for Graduation: 18

**Semester Curriculum for Electronics Technology Certificate**

1st Semester (Fall)		C-L-SHC
EGR 131	Intro to Electronics Tech.	1-2-2
ELC 131	DC/AC Circuit Analysis	4-3-5
MAT 121	Algebra/Trigonometry I	2-2-3
		7-7-10
2nd Semester (Spring)		
ELN 131	Electronic Devices	3-3-4
		3-3-4
3rd Semester (Summer)		
ELN 132	Linear IC Applications	3-3-4
		3-3-4

Total Semester Hours Credit Required for Graduation: 18

**Laser and Photonics Technology**  
**Credential: Associate in Applied Science Degree**  
**in Laser and Photonics Technology**  
**A4028000**

The Laser and Photonics Technology curriculum is designed to develop the practical knowledge and skills required to be a successful technician in business and industry. Course work includes mathematics, science, communications, electronics and optics courses. An in-depth sequence of laboratory learning experiences develops the hands-on skills needed for specifying, operating and maintaining laser and photonics based systems.

Current and emerging job opportunities exist in the areas of fiber optic communications, materials processing, laser surgery, research and a variety of related areas. Program graduates often begin work as technicians in product testing, field service, product development or sales.

Entrance Standards: See General Admission Standards on page 7 (Gen. Info section).

Academic Standards: See General Academic Standards on page 18 (Gen. Info section).

Program Length: 5 semesters

Career Pathway Options: Associate in Applied Science in Laser and Photonics Technology

Program Sites:

Harnett Campus - Day Program

**Course Requirements for Laser and Photonics Technology Degree**

A. General Education Courses (16 SHC)		C-L-SHC
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
ENG 114	Prof Research & Reporting	3-0-3
MAT 121	Algebra/Trigonometry I	2-2-3
	Humanities Elective	3-0-3
	Social Science Elective	3-0-3

**B. Required Major Core Courses (34 SHC)**

ELC 131	DC/AC Circuit Analysis	4-3-5
ELN 131	Electronic Devices	3-3-4
ELN 132	Linear IC Applications	3-3-4
ELN 133	Digital Electronics	3-3-4
LEO 111	Principles of Lasers	1-3-2
LEO 211	Photonics Technology	5-6-7
LEO 212	Photonics Applications	3-3-4
LEO 223	Fiber Optics	3-3-4

**C. Other Major Hours Required for Graduation (24/25 SHC)**

CIS 111	Basic PC Literacy	1-2-2
	OR	
CIS 110	Intro to Computers	2-2-3
EGR 131	Intro to Electronics Tech.	1-2-2
ELC 127	Software for Technicians	1-3-2
ELN 275	Troubleshooting	1-3-2
ISC 221	Statistical Quality Control	3-0-3
LEO 221	PC Interface	3-3-4
MAT 122	Algebra/Trigonometry II	2-2-3
PHY 131	Physics - Mechanics	3-2-4
	Major Elective	2

Total Semester Hours Credit Required for Graduation: 74/75

Major Electives (Choose 2 SHC)

(Major elective combinations must be approved by advisor)

LEO 222	Photonics Appl. Project	1-3-2
COE 111	Co-op Work Experience I	0-10-1
COE 121	Co-op Work Experience II	0-10-1
COE 112	Co-op Work Experience I	0-20-2

Semester Curriculum for Laser and Photonics Technology Degree

1st Semester (Fall)

C-L-SHC		
CIS 111	Basic PC Literacy OR	1-2-2
CIS 110	Intro to Computers	2-2-3
EGR 131	Intro to Electronics Tech.	1-2-2
ELC 131	DC/AC Circuit Analysis	4-3-5
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
MAT 121	Algebra/Trigonometry I	2-2-3
11-11-16		

2nd Semester (Spring)

ELC 127	Software for Technicians	1-3-2
ELN 131	Electronic Devices	3-3-4
ELN 133	Digital Electronics	3-3-4
LEO 111	Principles of Lasers	1-3-2
MAT 122	Algebra/Trigonometry II	2-2-3
10-14-15		

3rd Semester (Summer)

ELN 132	Linear IC Applications	3-3-4
PHY 131	Physics - Mechanics	3-2-4
6-5-8		

Non Co-op Students

4th Semester (Fall - Non-co-op students)

ELN 275	Troubleshooting	1-2-2
ENG 114	Prof Research & Reporting	3-0-3
LEO 211	Photonics Technology	5-6-7
LEO 212	Photonics Applications	3-3-4
	Humanities Elective	3-0-3
15-11-19		

5th Semester (Spring - Non-co-op students)

ISC 221	Statistical Quality Control	3-0-3
LEO 221	PC Interface	3-3-4
LEO 222	Photonics Appl. Project	1-3-2
LEO 223	Fiber Optics	3-3-4
	Social Science Elective	3-0-3
13-9-16		

Non Co-op Students Graduate after the 5th Semester

Part-time Co-op Students

4th Semester (Fall – Part-time co-op students)

COE 111	Co-op Work Experience I	0-10-1
ELN 275	Troubleshooting	1-2-2
ENG 114	Prof Research & Reporting	3-0-3
LEO 211	Photonics Technology	5-6-7
LEO 212	Photonics Applications	3-3-4
12-21-17		

5th Semester

(Spring – Part-time co-op students)

COE 121	Co-op Work Experience II	0-10-1
ISC 221	Statistical Quality Control	3-0-3
LEO 221	PC Interface	3-3-4
LEO 223	Fiber Optics	3-3-4
	Social Science Elective	3-0-3
	Humanities Elective	3-3-3
15-19-18		

Part-time Co-op Students graduate after the 5th semester.

Full-time Co-op Students ONLY

4th Semester (Fall - Full-time co-op students)

COE 112	Co-op Work Experience I	0-20-2
0-20-2		

5th Semester

(Spring - Full-time co-op students)

ISC 221	Statistical Quality Control	3-0-3
LEO 221	PC Interface	3-3-4
LEO 223	Fiber Optics	3-3-4
	Social Science Elective	3-0-3
	Humanities Elective	3-0-3
15-6-17		

6th Semester (Fall - Full-time co-op students)

ELN 275	Troubleshooting	1-3-2
ENG 114	Prof Research & Reporting	3-0-3
LEO 211	Photonics Technology	5-6-7
LEO 212	Photonics Applications	3-3-4
12-12-16		

Full-time co-op students graduate after their 6th Semester.

Total Semester Hours Credit: 74/75

**Mechanical Engineering Technology  
Credential: Associate in Applied Science Degree  
in Mechanical Engineering Technology  
A4032000**

The Mechanical Engineering Technology curriculum prepares graduates for employment as technicians in the 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 communication.

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 American Society for Quality Control (ASQC), Society of Manufacturing Engineers (SME), and National Institute for Certification in Engineering Technology (NICET).

Entrance Standards: See General Admission Standards on page 6.

Academic Standards: See General Academic Standards on page 16.  
 Program Length: 6 semesters  
 Career Pathway Options: Associate in Applied Science in Mechanical Engineering Technology  
 Program Sites:  
 Lee Campus - Day Program  
 Course Requirements for Mechanical Engineering Technology

A. General Education Courses (16 SHC)	C-L-SHC
ENG 111 Expository Writing	3-0-3
ENG 111A Expository Writing Lab	0-2-1
ENG 114 Professional Research and Reporting	3-0-3
MAT 120 Geometry and Trigonometry	2-2-3
Humanities Elective	3-0-3
Social Science Elective	3-0-3

B. Required Major Core Courses (21 SHC)	
Required Subject Area	
DDF 211 Design Process I	1-6-4
DFT 151 CAD I	2-3-3
DFT 152 CAD II	2-3-3
MEC 161 Manufacturing Processes I	3-0-3
MEC 250 Statics and Strength of Mat.	4-3-5
MEC 231 CAM I	1-4-3

C. Other Major Hours Required for Graduation (36 SHC)	
CIS 111 Basic PC Literacy	1-2-2
DFT 111 Technical Drafting I	1-3-2
DFT 153 CAD III	2-3-3
DFT 154 Introduction to Solid Modeling	2-3-3
DFT 214 Descriptive Geometry	1-2-2
MAC 121 Introduction to CNC	2-0-2
MAT 121 Algebra/Trigonometry I	2-2-3
MAT 122 Algebra/Trigonometry II	2-2-3
MEC 110 Introduction to CAD/CAM	1-2-2
MEC 130 Mechanisms	2-2-3
MEC 232 CAM II	1-4-3
PHY 131 Physics-Mechanics	3-2-4
PHY 133 Physics-Sound and Light	3-2-4

Total Semester Hours Credit required for graduation: 73

Semester Curriculum for Mechanical Engineering Technology Degree

1st Semester (Fall)	C-L-SHC
CIS 111 Basic PC Literacy	1-2-2
DFT 111 Technical Drafting I	1-3-2
DFT 151 CAD I	2-3-3
MAC 121 Introduction to CNC	2-0-2
MEC 110 Introduction to CAD/CAM	1-2-2
MEC 231 CAM I	1-4-3
	8-14-14

2nd Semester (Spring)	
DFT 152 CAD II	2-3-3
DFT 153 CAD III	2-3-3
DFT 214 Descriptive Geometry	1-2-2
MAT 120 Geometry and Trigonometry	2-2-3
MEC 161 Manufacturing Processes I	3-0-3
	10-10-14

3rd Semester (Summer)	
DDF 211 Design Process I	1-6-4
ENG 111 Expository Writing	3-0-3
ENG 111A Expository Writing Lab	0-2-1

4-8-8

A Mechanical Engineering Technology Diploma may be obtained.

4th Semester (Fall)	
DFT 154 Introduction to Solid Modeling	2-3-3
ENG 114 Professional Research and Reporting	3-0-3
MAT 121 Algebra/Trigonometry I	2-2-3
Social Science Elective	3-0-3
	10-5-12

5th Semester (Spring)	
MAT 122 Algebra/Trigonometry II	2-2-3
MEC 130 Mechanisms	2-2-3
MEC 232 CAM II	1-4-3
PHY 131 Physics-Mechanics	3-2-4
Humanities elective	3-0-3
	11-10-16

6th Semester (Summer)	
MEC 250 Statics and Strength of Mat.	4-3-5
PHY 133 Physics- Sound and Light	3-2-4
	7-5-9

Total Semester Hours Credit Required for Graduation: 73

**Mechanical Engineering Technology  
 Credential: Diploma in Mechanical Engineering  
 Technology  
 D4032000**

The Mechanical Engineering Technology curriculum prepares graduates for employment as technicians in the 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 communication.

Graduates of the curriculum should find employment opportunities in the manufacturing or service sectors of engineering technology. Engineering technicians may obtain professional certification by application to organizations such as American Society for Quality Control (ASQC), Society of Manufacturing Engineers (SME), and National Institute for Certification in Engineering Technology (NICET).

Entrance Standards: See General Admission Standards on page 6.

Academic Standards: See General Academic Standards on page 16.

Program Length: 3 semesters

Career Pathway Options: Associate in Applied Science in Mechanical Engineering Technology, Diploma in Mechanical Engineering Technology

Program Sites:  
 Lee Campus - Day Program

Course Requirements for Mechanical Engineering Technology

## Diploma

A. General Education Courses (7 SHC)		C-L-SHC
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
MAT 120	Geometry and Trigonometry	2-2-3

## B. Required Major Core Courses (16 SHC)

DDF 211	Design Process I	1-6-4
DFT 151	CAD I	2-3-3
DFT 152	CAD II	2-3-3
MEC 161	Manufacturing Processes I	3-0-3
MEC 231	CAM I	1-4-3

## C. Other Major Hours Required for Graduation (13 SHC)

CIS 111	Basic PC Literacy	1-2-2
DFT 111	Technical Drafting I	1-3-2
DFT 153	CAD III	2-3-3
DFT 214	Descriptive Geometry	1-2-2
MAC 121	Introduction to CNC	2-0-2
MEC 110	Introduction to CAD/CAM	1-2-2

Total Semester Hours Credit required for graduation: 36

## Semester Curriculum for Mechanical Engineering Technology Diploma

1st Semester (Fall)		C-L-SHC
CIS 111	Basic PC Literacy	1-2-2
DFT 111	Technical Drafting I	1-3-2
DFT 151	CAD I	2-3-3
MAC 121	Introduction to CNC	2-0-2
MEC 110	Introduction to CAD/CAM	1-2-2
MEC 231	CAM I	1-4-3
		8-14-14

## 2nd Semester (Spring)

DFT 152	CAD II	2-3-3
DFT 153	CAD III	2-3-3
DFT 214	Descriptive Geometry	1-2-2
MAT 120	Geometry and Trigonometry	2-2-3
MEC 161	Manufacturing Processes I	3-0-3
		10-10-14

## 3rd Semester (Summer)

DDF 211	Design Process I	1-6-4
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
		4-8-8

Total Semester Hours Credit required for graduation: 36

## **Mechanical Engineering Technology Credential: Certificate in Computer Aided Drafting C4032001**

The rapidly developing age of high technology has brought about a need for people in the fields of architecture, land surveying, manufacturing, drafting, maintenance, engineering and design to update their computer graphics skills.

This certificate is intended for persons with some drafting experience who wish to attend class at night. (Enrollment is by approval of advisor.)

Entrance Standards: See General Admission Standards on page 6.

Academic Standards: See General Academic Standards on page 16.

Program Length: 2 semesters

Career Pathway Options: Associate in Applied Science in Mechanical Engineering Technology (Higher entrance standards required); Diploma in Mechanical Engineering Technology; Certificate in Computer Aided Drafting, Certificate in Computer Aided Manufacturing  
Program Sites: Lee Campus - Evening Program

## Course Requirements for Computer Aided Drafting Certificate A. Required Major Core Courses (9 SHC) C-L-SHC

DFT 151	CAD I	2-3-3
DFT 152	CAD II	2-3-3
DFT 154	Introduction to Solid Modeling	2-3-3
Or		
MEC 161	Manufacturing Processes I	3-0-3

## B. Other Major Hours Required for Graduation (3 SHC)

DFT 153	CAD III	2-3-3
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Total Semester Hours Credit required for graduation: 12

## Semester Curriculum for Computer Aided Drafting Certificate

1st Semester (Fall)		C-L-SHC
DFT 151	CAD I	2-3-3
DFT 153	CAD III	2-3-3
		4-6-6
2nd Semester (Spring)		
DFT 152	CAD II	2-3-3
DFT 154	Introduction to Solid Modeling	2-3-3
Or		
MEC 161	Manufacturing Processes I	3-0-3
		4-6-6

Total Semester Hours Credit: 12

## **Mechanical Engineering Technology Credential: Certificate in Computer Aided Manufacturing C4032002**

The rapidly developing age of high technology has brought about a need for people in the fields of manufacturing, CNC programming, tool and mold making, and engineering and design to develop skills in interfacing CAD/CAM with CNC equipment.

This certificate is intended for persons with some manufacturing experience who wish to attend class at night. (Enrollment is by approval of advisor.)

Entrance Standards: See General Admission Standards on page 6.

Academic Standards: See General Academic Standards on page 16.

Program Length: 2 semesters

Career Pathway Options: Associate in Applied Science in Mechanical Engineering Technology (Higher entrance standards required); Diploma in Mechanical Engineering Technology; Certificate in Computer Aided Drafting,

Certificate in Computer Aided Manufacturing  
 Program Sites: Lee Campus - Evening Program

Course Requirements for Computer Aided Manufacturing Certificate

A. Required Major Core Courses (9 SHC)		C-L-SHC
DFT 151	CAD I	2-3-3
DFT 152	CAD II	2-3-3
DFT 231	CAM I	1-4-3

B. Other Major Hours Required for Graduation (3 SHC)		
DFT 232	CAM II	1-4-3

Total Semester Hours Credit required for graduation: 12

Semester Curriculum for Computer Aided Manufacturing Certificate

1st Semester (Fall)		C-L-SHC
DFT 151	CAD I	2-3-3
DFT 231	CAM I	<u>1-4-3</u>
		3-7-6
2nd Semester (Spring)		
DFT 152	CAD II	2-3-3
DFT 232	CAM II	<u>1-4-3</u>
		3-7-6

Total Semester Hours Credit: 12

**Mechanical Engineering  
 Technology/Mechatronics Systems  
 Credential: Associate in Applied Science Degree  
 in Mechanical Engineering  
 Technology/Mechatronics Emphasis  
 A40320M0**

The Mechatronics Systems Technology curriculum prepares graduates for employment as technicians in the electro-mechanical field. Mechatronics technicians assist in design, development, testing, process design and improvement, and troubleshooting and repair of engineered systems. Emphasis is placed on the integration of electronics, microprocessors, and mechanical systems.

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

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 Institute of Electrical and Electronics Engineers (IEEE), American Society for Quality Control (ASQC), Society of Manufacturing Engineers (SME), and National Institute for Certification in Engineering Technology (NICET).

Entrance Standards: See General Admission Standards on page 6.

Academic Standards: See General Academic Standards on page 16.

Program Length: 6 semesters

Career Pathway Options: Associate in Applied Science in Mechanical Engineering Technology/ Mechatronics Emphasis  
 Program Sites: Lee Campus - Day Program

Course Requirements for Mechanical Engineering Technology Degree/Mechatronics Emphasis

A. General Education Courses (16 SHC)		C-L-SHC
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
ENG 114	Professional Research and Reporting	3-0-3
MAT 120	Geometry and Trigonometry	2-2-3
	Humanities Elective	3-0-3
	Social Science Elective	3-0-3

B. Required Major Core Courses (19 SHC)

Required Subject Area		
DDF 211	Design Process I	1-6-4
DFT 151	CAD I	2-3-3
DFT 152	CAD II	2-3-3
ELC 111	Introduction to Electricity	2-2-3
MEC 161	Manufacturing Processes I	3-0-3
MEC 231	CAM I	1-4-3

C. Other Major Hours Required for Graduation (35SHC)

CIS 111	Basic PC Literacy	1-2-2
DFT 153	CAD III	2-3-3
DFT 154	Introduction to Solid Modeling	2-3-3
EGR 285	Design Project	0-4-2
ELC 127	Software for Technicians	1-2-2
ELN 110	Survey of Electronics	2-2-3
ELN 133	Digital Electronics	3-3-4
ELN 232	Introduction to Microprocessors	3-3-4
ELN 233	Microprocessor Systems	3-3-4
ISC 221	Statistical Process Control	3-0-3
MEC 110	Introduction to CAD/CAM	1-2-2
MEC 130	Mechanisms	2-2-3

Total Semester Hours Credit required for graduation: 70

Semester Curriculum for Mechanical Engineering Technology Degree/Mechatronics Emphasis

1st Semester (Fall)		C-L-SHC
CIS 111	Basic PC Literacy	1-2-2
DFT 151	CAD I	2-3-3
ELC 111	Introduction to Electricity	2-2-3
MEC 110	Introduction to CAD/CAM	1-2-2
MEC 231	CAM I	<u>1-4-3</u>
		7-13-13

2nd Semester (Spring)		
DFT 152	CAD II	2-3-3
DFT 153	CAD III	2-3-3
ELN 110	Survey of Electronics	2-2-3
ELN 133	Digital Electronics	3-3-4
MAT 120	Geometry and Trigonometry	2-2-3
MEC 161	Manufacturing Processes I	<u>3-0-3</u>
		14-13-19

3rd Semester (Summer)		
DDF 211	Design Process I	1-6-4

ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	<u>0-2-1</u>
		4-8-8

A Mechanical Engineering Technology Diploma with a Mechatronics Emphasis may be obtained.

4th Semester (Fall)

DFT 154	Introduction to Solid Modeling	2-3-3
ELN 232	Introduction to Microprocessors	3-3-4
ENG 114	Professional Research and Reporting	3-0-3
	Humanity Elective	3-0-3
	Social Science Elective	<u>3-0-3</u>
		14-6-16

5th Semester (Spring)

EGR 285	Design Project	0-4-2
ELC 127	Software for Technicians	1-2-2
ELN 233	Microprocessor Systems	3-3-4
ISC 221	Statistical Process Control	3-0-3
MEC 130	Mechanisms	<u>2-2-3</u>
		9-11-14

Total Semester Hours Credit required for graduation: 70

**Mechanical Engineering  
Technology/Mechatronics Systems  
Credential: Diploma in Mechanical Engineering  
Technology/Mechatronics Emphasis  
D40320M0**

The Mechatronics Systems Technology curriculum prepares graduates for employment as technicians in the electro-mechanical field. Mechatronics technicians assist in design, development, testing, process design and improvement, and troubleshooting and repair of engineered systems. Emphasis is placed on the integration of electronics, microprocessors, and mechanical systems.

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

Graduates of the curriculum should find employment opportunities in the manufacturing or service sectors of engineering technology. Engineering technicians can obtain professional certification by application to organizations such as Institute of Electrical and Electronics Engineers (IEEE), American Society for Quality Control (ASQC), Society of Manufacturing Engineers (SME), and National Institute for Certification in Engineering Technology (NICET).

Entrance Standards: See General Admission Standards on page 6.

Academic Standards: See General Academic Standards on page 16.

Program Length: 3 semesters

Career Pathway Options: Associate in Applied Science in Mechanical Engineering Technology/ Mechatronics Emphasis, Diploma in Mechanical Engineering Technology/Mechatronics Emphasis

Program Sites: Lee Campus - Day Program

Course Requirements for Mechanical Engineering Technology Diploma/Mechatronics Emphasis

A. General Education Courses (7 SHC) C-L-SHC

ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
MAT 120	Geometry and Trigonometry	2-2-3

B. Required Major Core Courses (19 SHC)

Required Subject Area

DDF 211	Design Process I	1-6-4
DFT 151	CAD I	2-3-3
DFT 152	CAD II	2-3-3
ELC 111	Introduction to Electricity	2-2-3
MEC 161	Manufacturing Processes I	3-0-3
MEC 231	CAM I	1-4-3

C. Other Major Hours Required for Graduation (14 SHC)

CIS 111	Basic PC Literacy	1-2-2
DFT 153	CAD III	2-3-3
ELN 110	Survey of Electronics	2-2-3
ELN 133	Digital Electronics	3-3-4
MEC 110	Introduction to CAD/CAM	1-2-2

Total Semester Hours Credit required for graduation: 40

Semester Curriculum for Mechanical Engineering Technology Diploma/Mechatronics Emphasis

1st Semester (Fall)

CIS 111	Basic PC Literacy	1-2-2
DFT 151	CAD I	2-3-3
ELC 111	Introduction to Electricity	2-2-3
MEC 110	Introduction to CAD/CAM	1-2-2
MEC 231	CAM I	<u>1-4-3</u>
		7-13-13

2nd Semester (Spring)

DFT 152	CAD II	2-3-3
DFT 153	CAD III	2-3-3
ELN 110	Survey of Electronics	2-2-3
ELN 133	Digital Electronics	3-3-4
MAT 120	Geometry and Trigonometry	2-2-3
MEC 161	Manufacturing Processes I	<u>3-0-3</u>
		14-13-19

3rd Semester (Summer)

DDF 211	Design Process I	1-6-4
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	<u>0-2-1</u>
		4-8-8

Total Semester Hours Credit required for graduation: 40