Mechanical Engineering Technology

A.A.S. Degree (A40320)

Certificates (C40320A, C40320C, C240320D, C40320M, C40320W and C40320P)

Engineering Technologies

Job Outlook

According to the U.S. Department of Labor's *Occupational Outlook Handbook*, "Employment of industrial engineering technicians is projected to decline 3 percent from 2012 to 2022. The growing emphasis on cost control through increasing efficiency will keep up demand for industrial engineering technicians' services in most industries, including nonprofits."

Source: Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2014-15 Edition, Industrial Engineering Technicians, on the Internet at http://www.bls.gov/ooh/architecture-and-engineering/industrial-engineering-technicians.htm (visited May 19, 2014).

NOTE: Due to Iredell County's strong manufacturing base, including automotive and motorsports, the job outlook is more positive than the national average as employers look to fill positions in advanced manufacturing.

Occupational Information

Visit the link below to find out more about occupations in this field including skills, education, potential wages and more.

Industrial Engineering Technicians
CIP Code: 15.0805 SOC Code: 17-3026.00
http://www.onetonline.org/link/summary/17-3026.00

Mechanical Engineering Technicians
CIP Code: 15.0805 SOC Code: 17-3027.00
http://www.onetonline.org/link/summary/17-3027.00

Aerospace Engineering and Operations Technicians
CIP Code: 15.0805 SOC Code: 17-3021.00
http://www.onetonline.org/link/summary/17-3027.00

MITCHELL COMMUNITY COLLEGE
CONNECTING *Life to Learning*

www.mitchellcc.edu

Follow us on Facebook at https://www.facebook.com/MitchellCommunityCollege

An Equal Opportunity College/Affirmative Action Employer

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 subjects. Course work includes mathematics, Natural sciences, 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, industrial and technology managers, or research technicians.

A course of study that prepares the students to use basic engineering principles and technical skills to design, develop, test, and troubleshoot projects involving mechanical systems. Includes instruction in principles of mechanics, applications to specific engineering systems, design testing procedures, prototype and operational testing and inspection procedures, manufacturing system-testing procedures, test equipment operation and maintenance, 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.

Courses		Credits
TECHNICAL TRACK—Mechanical Engineering Technology A.A.S. Degree (A40320)		
General Education Required Courses		
COM 120	Introduction to Interpersonal Communication OR	
COM 231	Public Speaking	3
ENG 111	Writing and Inquiry	3
MAT 121	Algebra/Trigonometry I	3
	Humanities/Fine Arts Elective	3
	Social/Behavioral Sciences Elective	3
Total General Education Required Hours		**15**
Major Required Courses		
DDF 252	Advanced Solids Modeling	3
DFT 111	Technical Drafting I	2
DFT 151	CAD I	3
DFT 152	CAD II	3
DFT 153	CAD III	3
DFT 211	Gears, Cams, and Pulleys	2
EGR 250	Statics/Strength of Materials	5
ELN 110	Survey of Electronics	3
HYD 110	Hydraulics/Pneumatics I	3
ISC 121	Environmental Health and Safety	3
MAC 122	CNC Turning	2
MAC 124	CNC Milling	2
MAC 232	CAM: CNC Milling	3
MEC 110	Introduction to CAD/CAM	2
MEC 111	Machine Processes I	3
MEC 145	Manufacturing Materials I	3
PHY 131	Physics—Mechanics	4
WBL 111**	Work-Based Learning I	1
WBL 115**	Work-Based Learning Seminar I	1
	Major Electives	2-4
Total Major Required Hours		**53-55**

***WBL 111 and WBL 115 should be taken during the program of study after the completion of a minimum of 12 core semester hours.*

continued

Mechanical Engineering Technology

A.A.S. Degree (A40320) Certificates (C40320A, C40320C, C240320D, C40320M, C40320W and C40320P)

Our engineering students participated in NASA's University Student Launch Initiative (ULSI) from 2008-2011, and RockSat-C since 2012.

Program Contact
Sharon Rouse, Program Coordinator, 704-878-3241, srouse@mitchellcc.edu
Shawn Fraver, Instructor, 704-878-3308, sfraver@mitchellcc.edu

Major Electives *(Select 2-4 credits)*

WLD 110	Cutting Processes	2
WLD 115	SMAW (Stick) Plate	5
WLD 121	GMAW (MIG) FCAW/Plate	4
WLD 131	GMAW (TIG) Plate	4
WLD 141	Symbols and Specifications	4
Total Credit Hours Required for Technical Track A.A.S. Degree		**68-70**

COLLEGE TRANSFER TRACK—Mechanical Engineering Technology A.A.S. Degree (A40320)

General Education Required Courses

COM 110	Introduction to Communication OR	
COM 231	Public Speaking	3
ENG 111	Writing and Inquiry	3
MAT 171	Precalculus Algebra	4
	Humanities/Fine Arts Elective	3
	Social/Behavioral Sciences Elective	3
Total General Education Required Hours		**16**

Major Required Courses

CIS 115	Introduction to Programming and Logic	3
DFT 151	CAD I	3
DFT 153	CAD III	3
EGR 250	Statics/Strength of Materials	5
EGR 285	Design Project	2
ELN 110	Survey of Electronics	3
HYD 110	Hydraulics/Pneumatics I	3
ISC 121	Environmental Health and Safety	3
MAC 122	CNC Turning	2
MAC 124	CNC Milling	2
MAT 172	Precalculus Trigonometry	4
MEC 110	Introduction to CAD/CAM	2
MEC 111	Machine Processes I	3
MEC 145	Manufacturing Materials I	3
PHY 151	College Physics I	4
PHY 152	College Physics II	4
	Major Electives	6-7
Total Major Required Hours		**55-56**

Major Electives *(Select 6-7 credits)*

CSC 134	C++ Programming	3
DDF 252	Advanced Solid Modeling	3
MAC 232	CAM: CNC Welding	3
MAT 271	Calculus I	4
Total Credit Hours Required for College Transfer Track A.A.S. Degree		**71-72**

Manufacturing Certificate (C40320A)

DFT 151	CAD I	3
MAC 122	CNC Turning	2
MAC 124	CNC Milling	2
MEC 110	Introduction to CAD/CAM	2
MEC 111	Machine Processes I	3
MEC 145	Manufacturing Materials I	3
Total Credit Hours Required for Certificate Program		**15**

CAD Drafting Certificate (C40320C)

DDF 252	Advanced Solid Modeling	3
DFT 151	CAD I	3
DFT 152	CAD II	3

continued

Mechanical Engineering Technology

A.A.S. Degree (A40320) Certificates (C40320A, C40320C, C240320D, C40320M, C40320W and C40320P)

DFT	153	CAD III	3
MEC	110	Introduction to CAD/CAM	2
Total Credit Hours Required for Certificate Program			**14**

Gainful Employment Disclosure for this certificate program is available at http://mitchellcc.edu/files/catalogs-handbooks/programs/Drafting_GE/Gedt.html

Drafting Certificate (C40320D)

DDF	252	Advanced Solid Modeling	3
DFT	111	Technical Drafting I	2
DFT	151	CAD I	3
DFT	152	CAD II	3
DFT	153	CAD III	3
MEC	110	Introduction to CAD/CAM	2
Total Credit Hours Required for Certificate Program			**16**

Machining Certificate (C40320M)

DFT	111	Technical Drafting I	2
MAC	122	CNC Turning	2
MAC	124	CNC Milling	2
MAC	232	CAM: CNC Milling	3
MEC	110	Introduction to CAD/CAM	2
MEC	111	Machine Processes I	3
MEC	145	Manufacturing Materials I	3
Total Credit Hours Required for Certificate Program			**17**

Gainful Employment Disclosure for this certificate program is available at http://mitchellcc.edu/files/catalogs-handbooks/programs/Machining_GE/Gedt.html

Motor Sports Engineering (C40320W)

DFT	151	CAD I	3
DFT	153	CAD III	3
MEC	110	Introduction to CAD/CAM	2
MEC	111	Machine Processes I	3
WLD	110	Cutting Processes	2
WLD	121	GMAW (MIG) FCAW/Plate	4
Total Credit Hours Required for Certificate Program			**17**

Gainful Employment Disclosure for this certificate program is available at http://mitchellcc.edu/files/catalogs-handbooks/programs/MotorSports_GE/Gedt.html

Welding Certificate (C40320P)

WLD	110	Cutting Processes	3
WLD	115	SMAW (Stick) Plate	5
WLD	121	GMAW (MIG) FCAW/Plate	4
WLD	131	GTAW (TIG) Plate	4
WLD	141	Symbols and Specifications	3
Total Credit Hours Required for Certificate Program			**18**

Other Programs

If you are interested in an engineering-related program, Mitchell also offers:

- Pre-Engineering A.S. Degree (A1040D)
- Electronics Engineering Technology (A40200)
- Electrical/Electronics Technology Diploma (D35220)
- Electronics Engineering Technology Diploma (D40200)
- Digital Microprocessors Certificate (C40200D)

For more information on this and other programs, including application, admission requirements, and elective options, visit our website at www.mitchellcc.edu to view the current College catalog.

Program Contact
Sharon Rouse, Program Coordinator, 704-878-3241, srouse@mitchellcc.edu
Shawn Fraver, Instructor, 704-878-3308, sfraver@mitchellcc.edu