

BIOTECHNOLOGY, ENGINEERING & SKILLED TECHNOLOGIES

Mechanical Engineering Technology

Mechanical Engineering Technology Degree - A40320A

The Mechanical Engineering Technology curriculum provides a broad and diverse educational experience. Course work includes computer-aided drafting and design, applied mechanics, materials engineering, quality control manufacturing methods and processes, computer usage, mathematics, physics, and oral and written communications. The courses will stress critical thinking, planning and problem solving.

The diversity of Mechanical Engineering Technology degree enables students to pursue careers in the following fields:

- Engineering/Architectural
- Mechanical Design
- Manufacturing
- Quality
- Service

If elected, students can pursue a 4 year Engineering Technology degree after graduation.

Program Sequence

Fall Semester

DFT 151	CAD I.....	3
EGR 115	Introduction to Technology.....	3
EGR 115A	Intro to Technology Lab.....	1
MEC 161	Manufacturing Processes I.....	3
	Math Elective.....	3

Spring Semester

DFT 152	CAD II.....	3
DFT 154	Intro to Solid Modeling.....	3
ENG 111	Writing and Inquiry.....	3
MEC 130	Mechanisms.....	3
	Physics Elective.....	4

Summer Semester

PSY 150	General Psychology.....	3
	English/Communication Elective.....	3

Fall Semester

DFT 254	Intern Solid Modeling & Rendering.....	3
EGR 251	Statics.....	3
ELN 260	Prog Logic Controllers.....	4
HYD 180	Fluid Power in Automation.....	3
HYD 191A	Selected Topics in Fluid Power Lab.....	1
MEC 180	Engineering Materials.....	3

Spring Semester

EGR 252	Strength of Materials.....	3
EGR 285	Design Project.....	2
ISC 121	Environmental Health & Safety.....	3
	Humanities Elective.....	3
	Major Elective.....	2

Summer Semester

	Major Elective.....	3
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Math Electives

(Select 3 hours from the following courses)

MAT 121	Algebra/Trigonometry I.....	3
MAT 171	Precalculus Algebra.....	4

Physics Electives

(Select 4 hours from the following courses)

PHY 131	Physics-Mechanics.....	4
PHY 151	College Physics I.....	4

English/Communication Electives

(Select 3 hours from the following courses)

ENG 112	Writing and Research in the Disciplines.....	3
ENG 114	Professional Research & Reporting.....	3

Humanities Electives

(Select 3 hours from the following courses)

HUM 110	Technology and Society.....	3
HUM 115	Critical Thinking.....	3
PHI 240	Introduction to Ethics.....	3

Major Electives

(Select 5 hours from the following courses)

ARC 225	Architectural BIM I.....	2
ARC 225A	Architectural BIM I Lab.....	1
ATR 115	Introduction to Mechatronics.....	4
CEG 111	Intro to Gis and Gnss.....	4
DFT 153	CAD III.....	3
ELC 131	Circuit Analysis I.....	4
ELC 131A	Circuit Analysis I Lab.....	1
TDP 110	Introduction to 3-D Printing.....	3
WBL 111	Work-Based Learning I.....	1
WBL 112	Work-Based Learning I.....	2
WBL 113	Work-Based Learning I.....	3
WBL 120	Career Readiness, Explor, & Employ.....	3
WBL 121	Work-Based Learning II.....	1
WBL 122	Work-Based Learning II.....	2
WBL 123	Work-Based Learning II.....	3

Graduation Requirements 68 Credit Hours

Mechanical Engineering Technology Degree – Mechatronics Concentration - A40320B

Program Sequence

Fall Semester

DFT 151	CAD I.....	3
EGR 115	Introduction to Technology.....	3
EGR 115A	Intro to Technology Lab.....	1
ELC 131	Circuit Analysis I.....	4
ELC 131A	Circuit Analysis I Lab.....	1
	Math Elective.....	3

Spring Semester

DFT 152	CAD II.....	3
DFT 154	Intro to Solid Modeling.....	3
MEC 130	Mechanisms.....	3
MEC 161	Manufacturing Processes I.....	3
	Physics Elective.....	4

Summer Semester

ENG 111	Writing and Inquiry.....	3
PSY 150	General Psychology.....	3

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Fall Semester

EGR 251	Statics	3
ELN 260	Prog Logic Controllers.....	4
HYD 180	Fluid Power in Automation	3
HYD 191A	Selected Topics in Fluid Power Lab.....	1
MEC 180	Engineering Materials	3
	English/Communication Elective.....	3

Spring Semester

ATR 115	Introduction to Mechatronics	4
EGR 252	Strength of Materials	3
ISC 121	Environmental Health & Safety	3
	Humanities Elective.....	3
	Major Elective.....	3

Math Electives

(Select 3 hours from the following courses)

MAT 121	Algebra/Trigonometry I	3
MAT 171	Precalculus Algebra.....	4

Physics Electives

(Select 4 hours from the following courses)

PHY 131	Physics-Mechanics	4
PHY 151	College Physics I.....	4

English/Communication Electives

(Select 3 hours from the following courses)

ENG 112	Writing and Research in the Disciplines.....	3
ENG 114	Professional Research & Reporting.....	3

Humanities Electives

(Select 3 hours from the following courses)

HUM 110	Technology and Society.....	3
HUM 115	Critical Thinking.....	3
PHI 240	Introduction to Ethics.....	3

Major Electives

(Select 3 hours from the following courses)

ATR 214	Advanced PLCs	4
ATR 215	Sensors and Transducers	3
DFT 254	Interm Solid Modeling & Rendering	3
ELN 231	Industrial Controls	3
ELN 232	Introduction to Microprocessors	4
ELN 235	Data Communication Systems.....	4
WBL 111	Work-Based Learning I	1
WBL 112	Work-Based Learning I	2
WBL 113	Work-Based Learning I	3
WBL 120	Career Readiness, Explor, & Employ	3
WBL 121	Work-Based Learning II	1
WBL 122	Work-Based Learning II	2
WBL 123	Work-Based Learning II	3

Graduation Requirements 70 Credit Hours

Mechanical Engineering Technology Diploma – D40320A

The Mechanical Engineering Technology diploma program includes course work in computer-aided drafting and design (using AutoCAD), solid modeling (using SolidWorks), materials engineering, manufacturing methods and processes, mechanisms,

safety, computer usage, mathematics, and written communications.

Program Sequence

Fall Semester

DFT 151	CAD I.....	3
EGR 115	Introduction to Technology	3
EGR 115A	Intro to Technology Lab.....	1
MAT 121	Algebra/Trigonometry I.....	3
MEC 161	Manufacturing Processes I	3

Spring Semester

DFT 152	CAD II.....	3
DFT 154	Intro to Solid Modeling.....	3
ENG 111	Writing and Inquiry.....	3
ISC 121	Environmental Health & Safety.....	3
MEC 130	Mechanisms	3

Summer Semester

DFT 254	Interm Solid Modeling & Rendering.....	3
MEC 180	Engineering Materials.....	3
PSY 150	General Psychology	3

Graduation Requirements 37 Credit Hours

Mechanical Design Certificate - C40320B

The Mechanical Design certificate program introduces students to computer-aided drafting and design (CAD) and solid modeling. Course work includes computer-aided drafting and design (using AutoCAD), solid modeling (using SolidWorks), and mechanisms.

The Mechanical Design certificate program cannot be completed in a single semester because students must complete a 2-course sequence in computer-aided drafting and design.

Program Sequence

Fall Semester

DFT 151	CAD I.....	3
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Spring Semester

DFT 152	CAD II.....	3
DFT 154	Intro to Solid Modeling.....	3

Summer Semester

DFT 254	Interm Solid Modeling & Rendering.....	3
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Graduation Requirements 12 Credit Hours

Mechatronics Certificate – C40320I

The Mechatronics certificate program provides an overview of the technology used in the field of mechatronics. Course work includes mechatronics, programmable logic controllers (PLCs), fluid power in automation, and solid modeling (using SolidWorks).

Program Sequence

Fall Semester

ISC 121	Environmental Health & Safety.....	3
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MEC 130 Mechanisms 3

Spring Semester

ELN 260 Prog Logic Controllers4

Summer Semester

ATR 115 Introduction to Mechatronics 4

Graduation Requirements 14 Credit Hours

Electromechanical Analysis Certificate - C40320J

The Electromechanical Analysis certificate program includes course work in mechanical analysis, mechatronics, programmable logic controllers (PLCs), and fluid power in automation.

Some of the courses for the Electromechanical Analysis certificate have one or more prerequisite courses that must be completed.

Program Sequence

Fall Semester

EGR 251 Statics 3
 ELN 260 Prog Logic Controllers..... 4
 HYD 180 Fluid Power in Automation 3
 HYD 191A Selected Topics in Fluid Power Lab..... 1

Spring Semester

EGR 252 Strength of Materials 3
 MEC 130 Mechanisms 3

Graduation Requirements 17 Credit Hours

Mechanical Analysis and Design Certificate - C40320K

The Mechanical Analysis and Design certificate program includes course work in mechanical analysis (Statics), programmable logic controllers (PLCs), and fluid power in automation. Students will then apply the knowledge gained from this course work in a capstone design project course.

Some of the courses for the Mechanical Analysis and Design certificate program have one or more prerequisite courses that must be completed.

Program Sequence

Fall Semester

EGR 251 Statics 3
 HYD 180 Fluid Power in Automation 3
 HYD 191A Selected Topics in Fluid Power Lab..... 1

Spring Semester

EGR 285 Design Project..... 2
 ELN 260 Prog Logic Controllers..... 4

Graduation Requirements 13 Credit Hours

Mechanical Analysis and Design II Certificate - C40320L

The Mechanical Analysis and Design II certificate program builds on the Mechanical Analysis and Design certificate and includes course work in engineering materials, strength of materials, safety, and solid modeling (using SolidWorks).

Some of the courses for the Mechanical Analysis and Design II certificate program have one or more prerequisite courses that must be completed.

Program Sequence

Fall Semester

DFT 254 Intern Solid Modeling & Rendering.....3
 MEC 180 Engineering Materials.....3

Spring Semester

EGR 252 Strength of Materials3
 ISC 121 Environmental Health & Safety.....3

Graduation Requirements 12 Credit Hours

Mechanical Technologies Certificate - C40320M

Program Sequence

Fall Semester

MEC 161 Manufacturing Process I.....3
 MEC 180 Engineering Materials.....3

Spring Semester

ISC 121 Environmental Health & Safety.....3
 MEC 130 Mechanisms3

Graduation Requirements 12 Credit Hours