

# *Mechatronics Engineering Technology*

A40350 (Associate Degree), D40350 (Diploma), C40350A (Certificate), C40350B (Certificate)

A course of study that prepares the students to use basic engineering principles and technical skills in developing and testing automated, servomechanical, and other electromechanical systems. Includes instruction in prototype testing, manufacturing and operational testing, systems analysis and maintenance procedures. Graduates should be qualified for employment in industrial maintenance and manufacturing including assembly, testing, startup, troubleshooting, repair, process improvement, and control systems, and should qualify to sit for Packaging Machinery Manufacturers Institute (PMMI) mechatronics or similar industry examinations.

*In addition to the courses listed below, students may be required to take transition/co-requisite classes based on RISE criteria. These classes do not count toward hours required for graduation.*

<u>Title</u>	<u>Class/Lab/Credit</u>			
<i>I. General Education Courses</i>				
COM 120	Interpersonal Communications	3	0	3
or				
COM 231	Public Speaking	3	0	3
ENG	111 Writing and Inquiry	3	0	3
MAT	121 Algebra/Trigonometry I	2	2	3

*Select one course each from Humanities/Fine Arts and Social/Behavioral Sciences on page 79*

## *II. Technical Core Courses*

### *A. Major Core*

EGR	125	Appl Software for Tech	1	2	2
ISC	112	Industrial Safety	2	0	2

### *III. Concentration*

ATR	112	Intro to Automation	2	3	3
DFT	119	Basic CAD	1	2	2
ELC	128	Intro to PLC	2	3	3
ELC	130	Advanced Motors/Controls	2	2	3
ELC	131	Circuit Analysis I	3	3	4
ELC	213	Instrumentation	3	2	4
HYD	110	Hydraulics/Pneumatics I	2	3	3
MEC	130	Mechanisms	2	2	3
PHY	131	Physics-Mechanics	3	2	4

### *IV. Other Major Courses*

Take 8 credits

MAC	121	Intro to CNC	2	0	2
MNT 110		Intro to Maintenance Processes	1	3	2
PCI	264	Process Controls with PLC's	3	3	4
WBL	111	Work-Based Learning I	0	10	1
WBL	112	Work-Based Learning I	0	20	2

WBL	113	Work-Based Learning I	0	30	3
WBL	114	Work-Based Learning I	0	40	4
WBL	121	Work-Based Learning II	0	10	1
WBL	122	Work-Based Learning II	0	20	2
WBL	123	Work-Based Learning II	0	30	3
WBL	124	Work-Based Learning II	0	40	4
WBL	131	Work-Based Learning III	0	10	1
WBL	132	Work-Based Learning III	0	20	2
WBL	133	Work-Based Learning III	0	30	3
WBL	134	Work-Based Learning III	0	40	4
WBL	211	Work-Based Learning IV	0	10	1
WBL	212	Work-Based Learning IV	0	20	2
WBL	213	Work-Based Learning IV	0	30	3
WBL	214	Work-Based Learning IV	0	40	4

Take 8 credits

BPR	135	Schematics and Diagrams	2	0	2
EGR	150	Introduction to Engineering	1	2	2
ELC	115	Industrial Wiring	2	6	4
MNT 160		Industrial Fabrication	1	3	2

*V. Other Required Courses*

ACA	115	Success and Study Skills	0	2	1
ACA 220		Professional Transition	1	0	1

*Total Credits: 66*

*Recommended Semester Schedule*

*First Year-Fall*

ACA	115	Success and Study Skills	0	2	1
ATR	112	Intro to Automation	2	3	3
EGR	125	Appl. Software for Tech	1	2	2
ELC	131	Circuit Analysis	3	3	4
HYD	110	Hydraulics/Pneumatics	2	3	3
ISC	112	Industrial Safety	1	0	2

*First Year-Spring*

BPR	135	Schematics and Diagrams	2	0	2
DFT	119	Basic CAD	1	2	2
ELC	128	Intro to PLC	2	3	3
ENG	111	Writing and Inquiry	3	0	3
MNT 110		Intro to Maintenance Processes	1	3	2

*First Year-Summer*

MAT	121	Algebra/Trigonometry I	2	2	3
Social Science Elective		– see page75	3	0	3
Humanities/Fine Arts Elective		– see list on page75	3	0	3

*Second Year-Fall*

ELC	130	Adv Motors/Controls	2	2	3
ELC	213	Instrumentation	3	2	4
MAC	121	Introduction to CNC	2	0	2
MEC	130	Mechanisms	2	2	3
PCI	264	Process Controls with PLC's	3	3	4

*Second Year-Spring*

ACA 220	Professional Transition	1	0	1
COM 120	Interpersonal Communication	3	0	3
EGR 150	Intro to Engineering	1	2	2
ELC 115	Industrial Wiring	2	6	4
PHY 131	Physics – Mehanics	3	2	4

*Note:* WBL 111, 112, 113, 114, 121, 122, 123, 124, 131, 132, 133, 134, 211, 212, 213, 214 may count for any of the following: MNT 110, BPR 135, PCI 264, EGR 150, ELC 115

*Mechatronics Engineering Technology Diploma Program (D40350)*

*I. General Education Courses*

ENG	111	Writing and Inquiry	3	0	3
MAT	121	Algebra/Trigonometry I	2	2	3

*II. Major Courses*

*A. Core Courses*

ATR	112	Intro to Automation	2	3	3
DFT	119	Basic CAD	1	2	2
EGR	125	Appl. Software for Tech	1	2	2
ELC	128	Intro to PLC	2	3	3
ELC	131	Circuit Analysis I	3	3	4
ELC	213	Instrumentation	3	2	4
HYD	110	Hydraulics/Pneumatics I	2	3	3
ISC	112	Industrial Safety	2	0	2
PHY	131	Physics – Mehanics	3	2	4

*III. Other Major Courses*

*Take 4 credits*

MAC	121	Introduction to CNC	2	0	2
MNT 110	Intro to Maintenance Processes	1	3	2	
MNT 160	Industrial Fabrication	1	3	2	
WBL	111	Work-Based Learning I	0	10	1
WBL	112	Work-Based Learning I	0	20	2
WBL	121	Work-Based Learning II	0	10	1
WBL	122	Work-Based Learning II	0	20	2
WBL	131	Work-Based Learning III	0	10	1
WBL	132	Work-Based Learning III	0	20	2

WBL	211	Work-Based Learning IV	0	10	1
WBL	212	Work-Based Learning IV	0	20	2

*IV. Other Required Courses*

ACA	115	Success and Study Skills	0	2	1
ACA	220	Professional Transition	1	0	1

*Total Credits: 39*

*Recommended Semester Schedule*

*First Year-Fall*

ACA	115	Success and Study Skills	0	2	1
EGR	125	Appl. Software for Tech	1	2	2
ELC	131	Circuit Analysis	3	3	4
HYD	110	Hydraulics/Pneumatics	2	3	3
ISC	112	Industrial Safety	1	0	2

*First Year-Spring*

DFT	119	Basic CAD	1	2	2
ELC	128	Intro to PLC	2	3	3
MNT	110	Intro to Maintenance Processes	1	3	2
PHY	131	Physics – Mechanics	3	2	4

*First Year-Summer*

ENG	111	Writing and Inquiry	3	0	3
MAT	121	Algebra/Trigonometry I	2	2	3

*Second Year-Fall*

ACA	220	Professional Transition	1	0	1
ATR	112	Intro to Automation	2	3	3
ELC	213	Instrumentation	3	2	4
MAC	121	Introduction to CNC	2	0	2

*Mechatronics Engineering Technology Certificate Program (C40350A) Level I*

*I. Major Courses*

ATR	112	Intro to Automation	2	3	3
DFT	119	Basic CAD	1	2	2
EGR	125	Appl Software for Tech	1	2	2
EGR	150	Introduction to Engineering	1	2	2
ELC	128	Intro to PLC	2	3	3

*Total Credits: 12*

*Recommended Semester Schedule*

*First Year-Fall*

ATR	112	Intro to Automation	2	3	3
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EGR	125	Appl Software for Tech	1	2	2
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*First Year-Spring*

DFT	119	Basic CAD	1	2	2
EGR	150	Introduction to Engineering	1	2	2
ELC	128	Intro to PLC	2	3	3

*Mechatronics Engineering Technology Certificate Program (C40350B) Level II*

*I. Major Courses*

ATR	112	Intro to Automation	2	3	3
DFT	119	Basic CAD	1	2	2
EGR	125	Appl Software for Tech	1	2	2
EGR	150	Introduction to Engineering	1	2	2
ELC	128	Intro to PLC	2	3	3
HYD	110	Hydraulics/Pneumatics I	2	3	3
MNT 110		Intro to Maintenance Processes	1	3	2

*Total Credits: 17*

*Recommended Semester Schedule*

*First Year-Fall*

ATR	112	Intro to Automation	2	3	3
EGR	125	Appl Software for Tech	1	2	2
HYD	110	Hydraulics/Pneumatics	2	3	3

*First Year-Spring*

DFT	119	Basic CAD	1	2	2
EGR	150	Introduction to Engineering	1	2	2
ELC	128	Intro to PLC	2	3	3
MNT 110		Intro to Maintenance Processes	1	3	2