

Industrial Systems Technology
Credential: Diploma in Industrial Systems Technology
D5024000

The Industrial Systems Technology curriculum is designed to prepare or upgrade individuals to safely service, maintain, repair, or install equipment. Instruction includes theory and skill training needed for inspecting, testing, troubleshooting, and diagnosing industrial systems. Students will learn multi-craft technical skills in blueprint reading, mechanical systems maintenance, electricity, hydraulics/pneumatics, welding, machining or fabrication, and includes various diagnostic and repair procedures. Practical application in these industrial systems will be emphasized and additional advanced course work may be offered.

Upon completion of this curriculum, graduates should be able to individually, or with a team, safely install, inspect, diagnose, repair, and maintain industrial process and support equipment. Students will also be encouraged to develop their skills as life-long learners.

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 in Industrial Systems Technology (Higher entrance standards required); Diploma in Industrial Systems Maintenance Technology

Program Sites: Lee Campus - Day Program

Course Requirements for Industrial Systems Technology Diploma

A. General Education Courses (9/10 SHC) C-L-SHC

*ENG 102 Applied Communications II 3-0-3
 Humanities Elective 3-0-3

*MAT 101 Applied Mathematics I 2-2-3

Or

PHY 121 Applied Physics I 3-2-4

B. Required Major Core Courses (18/19 SHC)

BPR 111 Blueprint Reading 1-2-2

ELC 112 DC/AC Electricity 3-6-5

HYD 110 Hydraulics/Pneumatics 2-3-3

ISC 112 Industrial Safety 2-0-2

OR

ISC 110 Workplace Safety 1-0-1

MEC 111 Machine Processes I 1-4-3

MNT 110 Intro. to Maint. Procedures 1-3-2

WLD 112 Basic Welding Processes 1-3-2

C. Other Major Hours Required for Graduation (17/18 SHC)

AHR 120 HVACR Maintenance 1-3-2

BPR 115 Elc Fluid Power Diagrams 1-2-2

CIS 111 Basic PC Literacy 1-2-2

ELN 229 Industrial Electronics 3-3-4

MNT 111 Maintenance Practices 2-2-3

OR

COE 112 Co-op Work Exp. I 0-20-2

WLD 115 SMAW (Stick) Plate 2-9-5

*These courses are not transferable to the AAS Degree.

Total Semester Hours Credit Required for Graduation:
 44/47

Semester Curriculum for Industrial Systems Technology Diploma

1st Semester (Fall) C-L-SHC

BPR 111 Blueprint Reading 1-2-2

ELC 112 DC/AC Electricity 3-6-5

MEC 111 Machine Processes I 1-4-3

MNT 110 Intro to Maint. Procedures 1-3-2

WLD 112 Basic Welding Processes 1-3-2

Humanities Elective 3-0-3

11-17-17

2nd Semester (Spring)

CIS 111 Basic PC Literacy 1-2-2

ELN 229 Industrial Electronics 3-3-4

*ENG 102 Applied Communications II 3-0-3

HYD 110 Hydraulics/Pneumatics 2-3-3

WLD 115 SMAW (Stick) Plate 2-9-5

11-17-17

3rd Semester (Summer)

AHR 120 HVACR Maintenance 1-3-2

BPR 115 Electric/Fluid Power Diagr 1-2-2

ISC Safety Elective 1

*MAT 101 Applied Mathematics I 2-2-3

Technical Elective 2

5-10-10

Technical Elective (Choose 2/3 SHC)

MNT 111 Maintenance Practice 2-2-3

COE 112 Co-op Work Exp. I 0-20-2

*These courses are not transferable to the AAS Degree.

Total Semester Hours Credit: 44/47

Industrial Systems Technology
Credential: Associate in Applied Science Degree in
Industrial Systems Technology/Biomaintenance
Emphasis
A502400B

The Industrial Systems Technology/Biomaintenance Emphasis curriculum is designed to prepare or upgrade individuals to safely service, maintain, repair, or install equipment in the Bioprocess industry. Instruction includes theory and skill training needed for inspecting, testing, troubleshooting, and diagnosing industrial systems.

Students will learn multi-craft technical skills in blueprint reading, mechanical systems maintenance, electricity, hydraulics/pneumatics, welding, machining or fabrication, and includes various diagnostic and repair procedures. Practical application in these industrial systems will be emphasized and additional advanced course work may be offered.

Upon completion of this curriculum, graduates should be able to individually, or with a team, safely install, inspect, diagnose, repair, and maintain industrial bioprocess equipment adhering to FDA regulations. Emphasis is given to providing proper documentation and following Standard Operating Procedures. Students will also be encouraged to develop their skills as life-long learners.

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 Industrial Systems Technology/Biomaintenance Emphasis

Program Sites:

Lee Campus - Day Program

Course Requirements for Industrial Systems Technology/Biomaintenance Emphasis

A. General Education Courses (15/16 SHC)

ENG 110	Freshman Composition	3-0-3
ENG 116	Technical Report Writing	3-0-3
MAT 115	Mathematical Models	2-2-3
	Or	
PHY 121	Applied Physics I	3-2-4
	Humanities Elective	3-0-3
	Social Science Elective	3-0-3

B. Required Major Core Courses (18/19 SHC)

BPR 111	Blueprint Reading	1-2-2
ELC 112	DC/AC Electricity	3-6-5
HYD 110	Hydraulics/Pneumatics	2-3-3
ISC 112	Industrial Safety	2-0-2
	Or	
ISC 110	Workplace Safety	1-0-1

MEC 111	Machine Processes I	1-4-3
MNT 110	Intro to Maint Procedures	1-3-2
WLD 112	Basic Welding Processes	1-3-2

C. Other Major Hours Required for Graduation (42 SHC)

AHR 120	HVACR Maintenance	1-3-2
BPM 110	Bioprocess Practices	3-4-5
BPR 115	Elc Fluid Power Diagrams	1-2-2
CIS 111	Basic PC Literacy	1-2-2
ELC 117	Motors and Controls	2-6-4
ELC 128	Introduction to PLC	2-3-3
ELC 228	PLC Applications	2-6-4
ELN 229	Industrial Electronics	3-3-4
ELN 231	Industrial Controls	2-3-3
ISC 278	cGMP Quality Systems	2-0-2
MNT 230	Pumps & Piping Systems	1-3-2
MNT 240	Ind. Equip. Troubleshooting	1-3-2
MNT 270	Bioprocess Equip Maint	1-3-2
MNT 280	Bioprocess Operating Systems	1-3-2
	Technical Elective	3

Technical Electives (Choose 3 SHC)

MNT 111	Maintenance Practices	2-2-3
COE 111	Co-op Work Experience I	0-10-1
COE 112	Co-op Work Experience I	0-20-2
COE 121	Co-op Work Experience II	0-10-1

Minimum Total Semester Hours Credit Required for Graduation: 75/76

Semester Curriculum for Industrial Systems Technology/Biomaintenance Emphasis

1st Semester (Fall)		C-L-SHC
BPR 111	Blueprint Reading	1-2-2
ELC 112	DC/AC Electricity	3-6-5
	Humanities Elective	3-0-3
MEC 111	Machine Processes I	1-4-3
MNT 110	Intro to Maint Procedures	1-3-2
WLD 112	Basic Welding Processes	<u>1-3-2</u>
		10-18-17
2nd Semester (Spring)		C-L-SHC
BPM 110	Bioprocess Practices	3-4-5
CIS 111	Basic PC Literacy	1-2-2
ELN 229	Industrial Electronics	3-3-4
ENG 110	Freshman Composition	3-0-3
HYD 110	Hydraulics/Pneumatics	2-3-3
		12-12-17
3rd Semester (Summer)		
AHR 120	HVACR Maintenance	1-3-2
BPR 115	Electric/Fluid Power Diagrams	1-2-2
MAT 115	Mathematical Models	2-2-3
ISC	Safety Elective	1
	Technical Elective	2
		8-9-11
4th Semester (Fall)		
ELC 117	Motors and Controls	2-6-4

ELC 128	Introduction to PLC	2-3-3	
ENG 116	Technical Report Writing	3-0-3	
ISC 278	cGMP Quality Systems	2-0-2	
MNT 230	Pumps & Piping Systems	1-3-2	
MNT 270	Bioprocess Equip Maint	1-3-2	
MNT 280	Bioprocess Operating Systems	1-3-2	
		11-15-16	
5th Semester (Spring)			
ELC 228	PLC Applications	2-6-4	
MNT 280	Bioprocess Operating Systems	1-3-2	
ELN 231	Industrial Controls	2-3-3	
MNT 240	Ind. Equip. Troubleshooting	1-3-2	
	Technical Elective		1
	Social Science Elective	3-0-3	
		9-15-15	
Total Semester Hours Credit:			76