



Program Planning Guide

Industrial Systems Technology Diploma (D50240)

Program Length: 3 semesters

Program Sites: Lee Main Campus, Day Program

Career Pathway Options: Associate in Applied Science in Industrial Systems Technology; Diploma in Industrial Systems Technology

Suggested Course Schedule		Class	Lab	Work	Credits	Notes:
1st Semester (fall)						
BPR 111	Print Reading	1	2	0	2	
CIS 111	Basic PC Literacy	1	2	0	2	
ELC 112	DC/AC Electricity	3	6	0	5	
MEC 111	Machine Processes I	1	4	0	3	
MNT 110	Intro to Maintenance Procedures	1	3	0	2	
Humanities/Fine Arts Elective		3	0	0	3	
Total Semester Hours		10	17	0	17	
2nd Semester (spring)						
ELC 128	Intro to PLC	2	3	0	3	
ENG 111	Writing and Inquiry	3	0	0	3	
MNT 111	Maintenance Practices	2	2	0	3	
PHY 121	Applied Physics I	3	2	0	4	
WLD 112	Basic Welding Processes	1	3	0	2	
WLD 117	Industrial SMAW	1	4	0	3	
Total Semester Hours		12	14	0	18	
3rd Semester (summer)						
AHR 120	HVACR Maintenance	1	3	0	2	
ELN 260	Prog Logic Controllers	3	3	0	4	
ISC 110	Workplace Safety	1	0	0	1	
HYD 110	Hydraulics/Pneumatics I	2	3	0	3	
Total Semester Hours		7	9	0	10	



Total Semester Hours Credit Required for Graduation: 45

Course Descriptions

AHR 120 HVACR Maintenance

This course introduces the basic principles of industrial air conditioning and heating systems. Emphasis is placed on preventive maintenance procedures for heating and cooling equipment and related components. Upon completion, students should be able to perform routine preventive maintenance tasks, maintain records, and assist in routine equipment repairs.

BPR 111 Print Reading

This course introduces the basic principles of print reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic prints and visualize the features of a part or system.

CIS 111 Basic PC Literacy

This course provides an overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and fundamental workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

ELC 112 DC/AC Electricity

This course introduces the fundamental concepts of and computations related to DC/AC electricity. Emphasis is placed on DC/AC circuits, components, operation of test equipment; and other related topics. Upon completion, students should be able to construct, verify, and analyze simple DC/AC circuits.

ELC 128 Introduction to PLC

This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to understand basic PLC systems and create simple programs.

ELN 260 Prog Logic Controllers

This course provides a detailed study of PLC applications, with a focus on design of industrial controls using the PLC. Topics include PLC components, memory organization, math instructions, documentation, input/output devices, and applying PLCs in industrial control systems. Upon completion, students should be able to select and program a PLC system to perform a wide variety of industrial control functions.

ENG 111 Writing and Inquiry

This course is designed to develop the ability to produce clear writing in a variety of genres and formats using a recursive process. Emphasis includes inquiry, analysis, effective use of rhetorical strategies, thesis development, audience awareness, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course has been approved for transfer under the CAA/ICAA as a general education course in English Composition.

HYD 110 Hydraulics/Pneumatics I

This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting.

ISC 110 Workplace Safety

This course introduces the basic concepts of workplace safety. Topics include fire, ladders, lifting, lock-out/tag-out, personal protective devices, and other workplace safety issues related to OSHA compliance. Upon completion, students should be able to demonstrate an understanding of the components of a safe workplace.

MEC 111 Machine Processes I

This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to manufacture simple parts to specified tolerance.



MNT 110 Intro to Maintenance Procedures

This course covers basic maintenance fundamentals for power transmission equipment. Topics include equipment inspection, lubrication, alignment, and other scheduled maintenance procedures. Upon completion, students should be able to demonstrate knowledge of accepted maintenance procedures and practices according to current industry standards.

MNT 111 Maintenance Practices

This course provides in-depth theory and practical applications relating to predictive and preventive maintenance programs. Emphasis is placed on equipment failure analysis, maintenance management software, and techniques such as vibration and infrared analysis. Upon completion, students should be able to demonstrate an understanding of modern analytical and documentation methods.

PHY 121 Applied Physics I

This algebra-based course introduces fundamental physical concepts as applied to industrial and service technology fields. Topics include systems of units, problem-solving methods, graphical analyses, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to demonstrate an understanding of the principles studied as applied in industrial and service fields.

WLD 112 Basic Welding Processes

This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes.

WLD 117 Industrial SMAW

This course introduces the SMAW (stick) process for joining carbon steel components for industrial applications. Topics include padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to safely perform SMAW fillet and groove welds on carbon steel plate with prescribed electrodes.

**Approved Humanities/Fine Arts Electives
Associate in Applied Science Degree/Diploma**

ART 111	Art Appreciation
ART 114	Art History Survey I
ART 115	Art History Survey II
DRA 111	Theatre Appreciation
ENG 125	Creative Writing I
ENG 231	American Literature I
ENG 232	American Literature II
ENG 241	British Literature I
ENG 242	British Literature II
HUM 110	Technology & Society
HUM 115	Critical Thinking
HUM 120	Cultural Studies
HUM 122	Southern Culture
HUM 150	American Women's Studies
HUM 160	Introduction to Film
MUS 110	Music Appreciation
MUS 112	Introduction to Jazz
PHI 240	Introduction to Ethics
REL 110	World Religions
REL 211	Intro to Old Testament
REL 212	Intro to New Testament