

APP101 INDUSTRIAL MAINTENANCE TECHNICIAN RELATED TECHNICAL INSTRUCTION (RTI) IS 630 HOURS AND RESULTS IN 2 TECHNICAL COLLEGE CREDITS (TCC) AND IS DONE IN CONJUNCTION WITH ON-THE-JOB TRAINING (OJT) THAT IS A TOTAL OF 4000 HOURS.

**RELATED TECHNICAL INSTRUCTION OUTLINE
(INDUSTRIAL MAINTENANCE TECHNICIAN)**

O*NET-SOC CODE: 49-9041.00 RAPIDS CODE: 0308HY

This instruction shall include, but not be limited to the following Lanier Technical College TCC

IE41 – Industrial Electrician: The Industrial Electrician Technical Certificate of Credit prepares students for employment using basic electrical maintenance skills. Instruction is provided in the occupational areas of industrial safety, direct and alternating current principles, and industrial wiring.

IF11 – Industrial Fluid Power Technician: The Industrial Fluid Power Technician certificate program prepares students to inspect, maintain, service, and repair industrial mechanical systems, fluid power systems, and pumps and piping systems. Topics include safety procedures, mechanics, fluid power, and pumps and piping system maintenance.

Industrial Systems Technology Diploma Program Course Descriptions:

IDSY 1101 DC Circuit Analysis: 3 Credit Hours, 60 Contact Hours: This course introduces direct current (DC) concepts and applications. Topics include: electrical principles and laws; batteries; DC test equipment; Series, parallel, and simple combination circuits; and laboratory procedures and safety practices.

IDSY 1105 AC Circuit Analysis: 3 Credit Hours, 60 Contact Hours: This course introduces alternating current concepts, theory, and application of varying sine wave voltages and current, and the physical characteristics and applications of solid-state devices. Topics include, but are not limited to, electrical laws and principles, magnetism, inductance, and capacitance.

IDSY 1110 Industrial Motor Controls I: 4 Credit Hours, 105 Contact Hours: This course introduces the fundamental concepts, principles, and devices involved in industrial motor controls, theories, and applications of single and three-phase motors, wiring motor control circuits, and magnetic starters and braking. Topics include, but are not limited to, motor theory and operating principles, control devices, symbols, and schematic diagrams, NEMA standards, Article 430 NEC and preventative maintenance and troubleshooting.

IDSY 1170 Industrial Mechanics: 4 Credit Hours, 120 Contact Hours: This course introduces and emphasizes the basic skill necessary for mechanical maintenance personnel. Instruction is also provided in the basic physics concepts applicable to the mechanics of industrial production equipment, and the application of mechanical principles with additional emphasis on power transmission and specific mechanical components.

IDSY 1130 Industrial Wiring: 4 Credit Hours, 105 Contact Hours: This course teaches the fundamental concepts of industrial wiring with an emphasis on installation procedures. Topics include: grounding, raceways, three-phase systems, transformers (three-phase and single-phase), wire sizing, overcurrent protection, NEC requirements, industrial lighting systems, and switches, receptacles, and cord connectors.

IDSY 1190 Fluid Power Systems: 4 Credit Hours, 105 Contact Hours: This course provides instruction in the fundamentals of safely operating hydraulic, pneumatic, and pump and piping systems. Theory and practical application concepts are discussed. Topics include hydraulic system principles and components, pneumatic system principles and components, and the installation, maintenance, and troubleshooting of pump and piping systems.

IDSY 1195 Pumps and Piping Systems: 3 Credit Hours, 75 Contact Hours: This course provides instruction in the fundamentals concepts of industrial pumps and piping systems. Topics include: pump identification, pump operation, installation, maintenance and troubleshooting, piping systems and installation of piping systems.

Totals: 25 Credit Hours, 630 Contact Hours

Industrial Maintenance Technician Apprenticeship OLJ Skills / Competency Mix

A. Safety and Health skills	hours
<ol style="list-style-type: none">1. Demonstrate good safety practices2. Demonstrate proper techniques for lifting and carrying3. Exercise extreme caution when working around electric lines and equipment4. Understand the hazards and safety involved in NFPA-70E5. Maintain work area properly6. Practice ladder and scaffold safety and safety involved with overhead operations7. Safely operate hand tools8. Properly handle gas cylinders, hoses, and regulators9. Wear required safety equipment / PPE10. Identify types of fire extinguishers and their proper uses11. Practice fire safety when operating heating equipment or working with hot materials12. Demonstrate safe practices when using power tools13. Demonstrate safe use of solvents14. Read and interpret SDS and GHS sheets15. Demonstrate awareness of confined space entry requirements16. Identify hazardous materials on site (i.e. leaking gas, asbestos)17. Understands and complies with OSHA guidelines and requirements18. Administer first aid and CPR19. Understands the principles and use of Lock-out/tag-out	
	180
B. Basic Skills	
<ol style="list-style-type: none">1. Use good time management skills (i.e. efficient use of time on job site)2. Follows GMP as defined by the company3. Read measuring devices4. Read and interpret drawings5. Knowledge of basic applied computer skills and CMMS6. Reads blueprints, specification and sketches and uses basic mathematics7. Read and interpret applicable codes8. Perform simple layout work and make templates9. Use various power tools10. Use precision measuring instruments such as height and depth gauges, calipers, micrometers	
	780
C. Industrial Mechanical Skills	
<ol style="list-style-type: none">1. Theory of machines and mechanical principles2. Disassembles and Reassembles machinery3. Welding and Fabrication4. Lay out work from blueprints, sketches and written instructions5. Knowledge of various complex hydraulic/pneumatic systems6. Overhauls various complex machinery such as power transmission7. Lubricating of systems8. Reliability Concepts9. Performs preventive maintenance on mechanical equipment10. Broad knowledge of mechanical principles11. Lay out and plan component installation12. Sets up/operates various kinds of machine such as lathes, planers, milling machines	
	1440

D. Industrial Electrical Skills

1. Safety Electrical
2. Wiring
3. Process Control Equipment / wiring
4. Install Troubleshoot and Repair Electrical Equipment
5. Electric Motors / Drives
6. General Electrical Maintenance
7. Reliability Concepts
8. PLC programming
9. Inputs, outputs, sensors, actuators

1400

E. Leadership Competencies

1. Project planning and scheduling
2. Preparing and presenting technical information

200

Target for a 2 year program

4000