

INDUSTRIAL MAINTENANCE TECHNICIAN

Industrial Systems Technology (A50240)

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.

COURSE REQUIREMENTS

Richmond Community College provides day and evening course sequences for selected programs to enable students to better plan what courses to take to reach their educational goals. However, given the continued increase in the use of technology in instruction and increasing student demand for distance learning courses, the College may offer hybrid, online, web-based and information highway courses in place of traditional courses in any course sequence that is listed. Therefore, students should be aware of this possibility and prepare themselves to successfully function in a hybrid, online, web-based, or information highway course.

| | Class | Lab | Work/ Clinical | Credit |
|---|--------------------------------------|-----|-------------------|--------|
| A. General Education Courses | | | | |
| 1. Required Courses | | | | |
| ENG 111 | Writing and Inquiry | 3 | 0 | 0 |
| COM 231 | Public Speaking | 3 | 0 | 0 |
| | or | | | |
| ENG 112 | Writing/Research in the Disciplines | 3 | 0 | 0 |
| MAT 143 | Quantitative Literacy | 2 | 2 | 0 |
| | Humanities/Fine Arts Elective* | 3 | 0 | 0 |
| | Social/Behavioral Sciences Elective* | 3 | 0 | 0 |
| B. Major Courses | | | | |
| 1. Core Courses | | | | |
| <i>To receive a degree, diploma or certificate from RCC, a student must have a grade of "C" or better in all core courses for the program of study.</i> | | | | |
| BPR 111 | Print Reading | 1 | 2 | 0 |
| ELC 112 | DC/AC Electricity | 3 | 6 | 0 |
| ELC 117 | Motors and Controls | 2 | 6 | 0 |
| ELC 120 | Introduction to Wiring | 2 | 2 | 0 |
| ELC 128 | Introduction to PLC | 2 | 3 | 0 |
| HYD 110 | Hydraulics/Pneumatics I | 2 | 3 | 0 |
| ISC 112 | Industrial Safety | 2 | 0 | 0 |
| MEC 111 | Machine Processes I | 1 | 4 | 0 |

| | | | | | | |
|----------------------------------|-----|--------------------------------------|---|---|----|---|
| MEC | 130 | Mechanisms | 2 | 2 | 0 | 3 |
| MNT | 110 | Intro to Maintenance Procedures | 1 | 3 | 0 | 2 |
| WLD | 112 | Basic Welding Processes | 1 | 3 | 0 | 2 |
| 2. Other Major Courses | | | | | | |
| AHR | 120 | HVACR Maintenance | 1 | 3 | 0 | 2 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| ELC | 125 | Diagrams and Schematics | 1 | 2 | 0 | 2 |
| ELN | 229 | Industrial Electronics | 3 | 3 | 0 | 4 |
| MNT | 230 | Pumps & Piping Systems | 1 | 3 | 0 | 2 |
| MNT | 240 | Industrial Equipment Troubleshooting | 1 | 3 | 0 | 2 |
| WBL | 111 | Work-Based Learning I | 0 | 0 | 10 | 1 |
| WBL | 115 | Work-Based Learning Seminar I | 1 | 0 | 0 | 1 |
| C. Other Required Courses | | | | | | |
| ACA | 122 | College Transfer Success | 0 | 2 | 0 | 1 |

Total Credit Hours **65**

*Approved Electives are listed on the page before the Course Descriptions.

SEMESTER SCHEDULE INDUSTRIAL SYSTEMS TECHNOLOGY

| | | | Class | Lab | Work/ Clinical | Credit |
|-------------------------------------|-----|-------------------------------------|-------|-----|-------------------|--------|
| First Year – Fall Semester | | | | | | |
| ACA | 122 | College Transfer Success | 0 | 2 | 0 | 1 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| ENG | 111 | Writing and Inquiry | 3 | 0 | 0 | 3 |
| ISC | 112 | Industrial Safety | 2 | 0 | 0 | 2 |
| MAT | 143 | Quantitative Literacy | 2 | 2 | 0 | 3 |
| MNT | 110 | Intro to Maintenance Procedures | 1 | 3 | 0 | 2 |
| | | | — | — | — | — |
| | | | 10 | 9 | 0 | 14 |
| First Year – Spring Semester | | | | | | |
| BPR | 111 | Print Reading | 1 | 2 | 0 | 2 |
| COM | 231 | Public Speaking | 3 | 0 | 0 | 3 |
| | or | | | | | |
| ENG | 112 | Writing/Research in the Disciplines | 3 | 0 | 0 | 3 |
| ELC | 112 | DC/AC Electricity | 3 | 6 | 0 | 5 |
| ELC | 125 | Diagrams and Schematics | 1 | 2 | 0 | 2 |
| HYD | 110 | Hydraulics/Pneumatics I | 2 | 3 | 0 | 3 |
| | | | — | — | — | — |
| | | | 13 | 13 | 0 | 15 |
| First Year – Summer | | | | | | |
| AHR | 120 | HVACR Maintenance | 1 | 3 | 0 | 2 |
| | | Humanities/Fine Arts Elective* | 3 | 0 | 0 | 3 |

| | | | | | | |
|--------------------------------------|-----|--------------------------------------|----|----|----|----|
| | | | 4 | 3 | 0 | 5 |
| Second Year – Fall Semester | | | | | | |
| ELC | 120 | Introduction to Wiring | 2 | 2 | 0 | 3 |
| ELN | 229 | Industrial Electronics | 3 | 3 | 0 | 4 |
| MEC | 111 | Machine Processes I | 1 | 4 | 0 | 3 |
| MEC | 130 | Mechanisms | 2 | 2 | 0 | 3 |
| MNT | 230 | Pumps & Piping Systems | 1 | 3 | 0 | 2 |
| WLD | 112 | Basic Welding Processes | 1 | 3 | 0 | 2 |
| | | | 10 | 17 | 0 | 17 |
| Second Year – Spring Semester | | | | | | |
| ELC | 117 | Motors and Controls | 2 | 6 | 0 | 4 |
| ELC | 128 | Introduction to PLC | 2 | 3 | 0 | 3 |
| MNT | 240 | Industrial Equipment Troubleshooting | 1 | 3 | 0 | 2 |
| WBL | 111 | Work-Based Learning I | 0 | 0 | 10 | 1 |
| WBL | 115 | Work-Based Learning Seminar I | 1 | 0 | 0 | 1 |
| | | Social/Behavioral Sciences Elective* | 3 | 0 | 0 | 3 |
| | | | 9 | 12 | 10 | 14 |

Total Credit Hours**65**

*Approved Electives are listed on the page before the Course Descriptions.

SEMESTER SCHEDULE
INDUSTRIAL SYSTEMS TECHNOLOGY (DIPLOMA) (D50240) (EVENING)

| | | | Work/ Class Lab Clinical Credit | | | |
|-------------------------------------|-----|---------------------------------|------------------------------------|----|---|---|
| First Year – Fall Semester | | | | | | |
| ACA | 122 | College Transfer Success | 0 | 2 | 0 | 1 |
| BPR | 111 | Print Reading | 1 | 2 | 0 | 2 |
| ELC | 112 | DC/AC Electricity | 3 | 6 | 0 | 5 |
| | | | 4 | 10 | 0 | 8 |
| First Year – Spring Semester | | | | | | |
| ELC | 125 | Diagrams and Schematics | 1 | 2 | 0 | 2 |
| ISC | 112 | Industrial Safety | 2 | 0 | 0 | 2 |
| MEC | 111 | Machine Processes I | 1 | 4 | 0 | 3 |
| MNT | 110 | Intro to Maintenance Procedures | 1 | 3 | 0 | 2 |
| | | | 5 | 9 | 0 | 9 |
| First Year – Summer Semester | | | | | | |
| ENG | 111 | Writing and Inquiry | 3 | 0 | 0 | 3 |

| | | | | | | |
|-----|-----|--------------------------------------|---|---|---|-----------|
| | | Social/Behavioral Sciences Elective* | 3 | 0 | 0 | 3 |
| | | | — | — | — | — |
| | | | 6 | 0 | 0 | 6 |
| | | Second Year – Fall Semester | | | | |
| HYD | 110 | Hydraulics/Pneumatics I | 2 | 3 | 0 | 3 |
| MEC | 130 | Mechanisms | 2 | 2 | 0 | 3 |
| WLD | 112 | Basic Welding Processes | 1 | 3 | 0 | 2 |
| | | | — | — | — | — |
| | | | 5 | 8 | 0 | 8 |
| | | Second Year – Spring Semester | | | | |
| ELC | 117 | Motors and Controls | 2 | 6 | 0 | 4 |
| ELC | 128 | Introduction to PLC | 2 | 3 | 0 | 3 |
| | | | — | — | — | — |
| | | | 4 | 9 | 0 | 7 |
| | | Total Credit Hours | | | | 38 |

**SEMESTER SCHEDULE
INDUSTRIAL SYSTEMS TECHNOLOGY (CERTIFICATE) (C50240)**

| | | | Class | Lab | Work/ Clinical | Credit |
|-----|-----|-------------------------------------|-------|------|-------------------|--------------|
| | | First Year – Fall Semester | | | | |
| BPR | 111 | Print Reading | 1 | 2 | 0 | 2 |
| ELC | 112 | DC/AC Electricity | 3 | 6 | 0 | 5 |
| | | or | | | | |
| MEC | 111 | Machine Processes I | 1 | 4 | 0 | 3 |
| WLD | 112 | Basic Welding Processes | 1 | 3 | 0 | 2 |
| | | | — | — | — | — |
| | | | 3-5 | 9-11 | 0 | 7-9 |
| | | First Year – Spring Semester | | | | |
| HYD | 110 | Hydraulics/Pneumatics I | 2 | 3 | 0 | 3 |
| ISC | 112 | Industrial Safety | 2 | 0 | 0 | 2 |
| MNT | 110 | Intro to Maintenance Procedures | 1 | 3 | 0 | 2 |
| | | | — | — | — | — |
| | | | 5 | 6 | 0 | 7 |
| | | Total Credit Hours | | | | 14-16 |