
WORKFORCE
READING AREA COMMUNITY COLLEGE
SPRING 2026
20 ANNIVERSARY
RACC
racc.edu
SCHMIDT TRAINING &
TECHNOLOGY CENTER
Ten South Second Street, Reading, PA | 610.372.4721 | 1.800.626.1665 | racc.edu

SCHMIDT TRAINING & TECHNOLOGY CENTER

CELEBRATING 20 YEARS!

The Schmidt Training and Technology Center is named in honor of Rolf Schmidt, who immigrated to the United States in 1957 with his wife, Renate, and their daughter. Arriving with just $2.40 worth of Deutschmark in his pocket, Rolf quickly began building a new life—learning to drive, purchasing an old car, securing work, and starting a new career within weeks. Shortly after, the rest of the Schmidt family joined him in America to continue establishing their lives and futures.

In 1970, Rolf and his brother Bill co-founded Sharpoint, Inc., a Reading-based manufacturer of precision surgical needles, sutures, and scalpels. In 1985, the company sold its core ophthalmic division to Nestlé's Alcon Laboratories, the primary marketer of Sharpoint products. Soon after, the remaining assets were purchased through a local management buyout, forming what became Surgical Specialties, Inc.

Rolf's deep commitment to Reading Area Community College stemmed from his own appreciation for education. His involvement with RACC began in 1990 when he was appointed by the Berks County Board of Commissioners to a task force studying the feasibility of broader college sponsorship. As co-chair, he recommended that Berks County sponsor RACC—a pivotal decision that helped transform the college into a respected center for accessible, high-quality education.

Rolf's dedication to educational excellence ultimately led to the creation of the Schmidt Training and Technology Center. In November 2003, he spearheaded a $2.5 million fundraising campaign to construct the facility on the RACC campus, contributing $1 million of his own toward the $10 million project. The center, named in his honor, opened in spring 2006.

Today Rolf Schmidt's legacy lives on. We continue his vision by providing manufacturers and students with high-quality, experiential technical training and essential business skills.

LEVIL TECHNOLOGY CORP

LMV-F400

IST Integrated Systems Technologies

Yaskawa Motoman GP8 8kg Robot

NEW PROGRAM COMING FOR 2026

- YRC 1000 Micro Robot Controller
- 6 Controlled Axis
- 727mm Horizontal Reach
- Robot Teach Pendant
- Functional Safety Unit (FSU)

Automation Components:

- Schunk 24vdc parallel gripper
- End of arm Laser Diffuse sensor
- ProFace HMI

WORKFORCE
READING AREA COMMUNITY COLLEGE

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READING AREA COMMUNITY COLLEGE
SCHMIDT TRAINING & TECHNOLOGY CENTER

Information Technology Lab

Machining Lab

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PLC Networking Lab

Smart Automation & Robotics Lab

CERTIFICATE AND DEGREE PROGRAMS
INDUSTRIAL MAINTENANCE TECHNICIAN, MECHATRONICS AAS

RACC's **Mechatronics/AMIST** technical courses are offered in two instructional delivery/learning models:

- **Traditional -** All training, both theory and hands-on, conducted at the Schmidt Training and Technology Center.
- **Hybrid -** Theory accessed over the Internet with instructor support; hands-on skills taught and assessed at the Schmidt Training and Technology Center. Access to the Internet training site is 24 hours a day, seven days a week.

In both models, instructors with relevant industry experience are available to guide students through the program.

AMIST 1 (ADVANCED MANUFACTURING INTEGRATED SYSTEMS)

MET 120
Industrial Mechanical – Hydraulics Track
ZTEC 356
Approximately 162 hours of training, 5 college credits
Investment: $4,935
Traditional or Hybrid Learning
- Hydraulics 1
- Hydraulics 2
- Pneumatics 1
- Pneumatics Maintenance
- Pneumatics Construction
- Piping Systems
- Hydraulic Troubleshooting
- Basic Mechanical Drives
- Light & Heavy Duty V-Belt and Chain Drives

OR*

MET 120
Industrial Mechanical – Pneumatics Track
ZTEC 371
Approximately 162 hours of training, 5 college credits
Investment: $4,935
Traditional or Hybrid Learning
- Pneumatics 1
- Pneumatics 2
- Pneumatics Maintenance
- Pneumatics Troubleshooting
- Hydraulics 1
- Piping Systems
- Basic Mechanical Drives
- Light & Heavy Duty V-Belt and Chain Drives

MET 130
Industrial Electrical
ZTEC 227
Approximately 120 hours of training, 4 college credits
Investment: $3,535
Traditional or Hybrid Learning
- Electrical Control Circuits
- Electrical Motor Control
- Electronic Sensors
- Relay Control Systems
- Residential/Commercial Wiring
- Industrial Electrical Wiring
- Industrial Power Distribution

MET 140-A
***Siemens S7-1200**
ZTEC 402
Approximately 80 hours of training, 2 college credits
Investment: $2,230
Traditional or Hybrid Learning
- Introduction to Programmable Controllers
- Basic HMI Panel Operations
- Basic PLC Programming
- PLC Motor Control
- PLC Timer & Counter Instruction
- Event Sequencing
- Program Control Instructions
- Math & Data Move Instructions
- HMI Application Editing
- Analog Inputs & Outputs
- PLC Motion Control

AMIST 2 (ADVANCED MANUFACTURING INTEGRATED SYSTEMS)

MET 150
Industrial Mechanical 2 – Hydraulics Track
ZTEC 369
Approximately 170 hours of training, 6 college credits
Investment: $4,860
- Spur Gear & Multiple Shaft Drives
- Belts, Lubrication, Shaft Alignment and Couplings
- Mechanical Drives 3 & 4
- Floor Standing Conveyors
- Vibration Analysis
- Laser Alignment
- Hydraulic Maintenance
- Pneumatic Directional Control Valves & Air Logic
- Advanced Pneumatics
- Pneumatic Troubleshooting

OR*

MET 150
Industrial Mechanical 2 - Pneumatics Track
ZTEC 375
Approximately 170 hours of training, 6 college credits
Investment: $4,860
- Spur Gear & Multiple Shaft Drives
- Synchronous Belt Drives
- Lubrication Concepts
- Precision Shaft Alignment
- Couplings
- Mechanical Drives 3 & 4
- Floor Standing Conveyors
- Vibration Analysis
- Laser Alignment
- Hydraulic Maintenance
- Hydraulics 2
- Hydraulic Troubleshooting

MET 160
Industrial Electrical 2
ZTEC 242
Approximately 115 hours of training, 3 college credits
Investment: $2,480
- Basic Electrical Machines System
- Advanced Electric Motor Controls
- DC Electronic Drives
- AC Electronic Drives
- PLC/VFD Wiring

MET 140-B
***Siemens S7-1200**
ZTEC 433
Approximately 40 hours of training
2 college credits
Investment: $1,130
- Introduction to PLC Troubleshooting
- PLC Systems Troubleshooting
- Analog Input/Output Troubleshooting
- Analog Application Troubleshooting

** Industry may request an SLC 500 substitution for A and B.*

OR* - pneumatics concentration preferred by food and pharmaceuticals manufacturing, hydraulics concentration preferred by general manufacturing

These courses have an open start date.
Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

CERTIFICATE AND DEGREE PROGRAMS
INDUSTRIAL MAINTENANCE TECHNICIAN, MECHATRONICS AAS

AMIST 3 (ADVANCED MANUFACTURING INTEGRATED SYSTEMS)

MET 200
Industrial Robotics and Motion Control
ZTEC 531
Approximately 140 hours of training,
4 college credits
Investment: $4,635
- Robotics & Computer Programming
- General Purpose Motion Control System
- Multi-Axis Motion Control System

MET 210
Process Control & Industrial Instrumentation
ZTEC 437
Approximately 90 hours of training,
3 college credits
Investment: $2,810

MET 220
Advanced Industrial PLC
AB ControlLogix
ZTEC 438
Approximately 170 hours of training,
4 college credits
Investment: $4,395
- Introduction to programmable controlers
- Basic PLC Programming
- PLC Motor Control
- Discrete I/O Interfacing
- Intro to PLC Troubleshooting
- PLC Systems Troubleshooting
- Event Sequencing
- Application Development
- PLC timer instructions
- PLC counter instructions
- Program Control Instructions
- Math and Data Move Instructions

AMIST 4 (ADVANCED MANUFACTURING INTEGRATED SYSTEMS)

MET 111
Manufacturing Fundamentals
ZTEC 561
Approximately 30 hours of training
1 college credit - hybrid learning
Investment: $625
- Principles of Advanced Manufacturing
  Introduces typical plant processes such as CNC, PLC and Automation
  Reviews typical plant layouts for efficient manufacturing
  Manufacturing personnel and their responsibilities
- Lean Manufacturing
  Introduces principles and methods of workplace organization using 5s methods
- Communication Skills
  Importance of effective communication, listening skills, and feedback
- Safety Practices and Regulations
  Reviews basic workplace safety concepts and practices
- Personal Protection Equipment
  Reviews the importance of Personal Protective Equipment (PPE)
  Identifies the potential hazards that require PPE
  Types of PPE required for different types of hazards
  The worker's role in following PPE guidelines and requirements

MET 240
Capstone Class:
Mechatronics Application Project
ZTEC 522
Approximately 120 hours of training
3 college credits
Investment: $3,520
This course provides students the opportunity to apply skills and knowledge gained from training in the electrical, mechanical and process control program areas to an independent mechatronics project. The student, working with another student or an instructor, will develop and implement a project plan that will demonstrate the student's ability to integrate the skills and knowledge learned.

MET 101
Introduction To Shop Machinery
ZTEC 558
Average time for course completion: 90 hours
3 college credits.
Investment: $2,625
- Quality Assurance
  - Basic Measurement, Precision Measurement, Dimensional Gauging
  - Introduction to SPC, SPC Problem Solving
  - Control Chart Operation, Control Chart Analysis
  - Geometric Dimensioning and Tolerancing
  - Location, Form and Orientation Tolerances
- Blueprint Reading
- Solid Drawing Modeling
  - Solid Model creation using Solidworks
  - Assembly creation using Solidworks
- Manual Machine Tools
  - Introduction to the Drill Press, Drill Press Operations
  - Introduction to the Milling Machine, Milling Operations
  - Introduction to the Manual Lathe, Lathe Operations
- OSHA 10-Hour General Industry Safety Course

MET Courses Plus General Education Requirements*

*Gen Ed Courses AAS Degree	29 cr.
CSS 103 College Success Strategies	3 cr.
MAT 160 College Algebra	3 cr.
COM 121 or 122 English Composition	3 cr.
PHY 240 Physics I	4 cr.
IFT 110 Microcomputer Applications	3 cr.
SOC 130 Sociology	3 cr.
Select one	4cr.
BIO 150, Biology I	
CHEM 150, Chemistry I	
PHY 245, Physics II	
COM 141 Technical Writing	3 cr.
HUM 100 Critical Thinking	3 cr.

PICK AND CHOOSE - GET CERTIFIED IN JUST WHAT YOU NEED.

CNC Precision

(Z)MTT 100 **Basic CNC Operation**
(Z)MTT 101 **Basic CNC Lathe**
(Z)MTT 180 **CNC Programming**
(Z)MTT 185 **CNC Milling Level 1**
(Z)MTT 276 **Advanced CNC Turning**
(Z)MTT 272 **CNC Milling Level 2**
(Z)MTT 288 **CAM Programming**

Manual Machining Level 1

(Z)MTT 105 **Intro to Machining**
(Z)MTT 110 **Basic Machine Tools**
(Z)MTT 157 **Turning Technology Level 1**
(Z)MTT 158 **Milling Technology Level 1**

Manual Machining Level 2

(Z)MTT 132 **Blueprint Reading**
(Z)MTT 212 **Milling Technology Level 2**
(Z)MTT 225 **Turning Technology Level 2**
(Z)MTT 221 **Grinding Technology**

Design/CAD

(Z)MTT 107 **SOLIDWORKS**
(Z)MTT 132 **Blueprint Reading**
(Z)MTT 288 **CAM Programming**
(Z)MTT 310 **AutoCAD**
ZMTT 330 **Autodesk Fusion 360**
ZMTT 320 **Autodesk Inventor**
ZMTT 341 **Solidworks CAM**
ZMTT 350 **Introduction to 3D Printing**

For description of all courses, reference pages 9-12

Precision Machining Level 1

National Institute for Metalworking Skills®

ENTRY LEVEL CNC MACHINE OPERATOR

BASIC CNC OPERATION
(Z)MTT-100 **$3,625**

Skills needed for the operation of the CNC mill, CNC lathe and CNC grinder. Preparation for NIMS Level I certificate: CNC Mill Operation. Includes OSHA 10-hour General Industry Training Program. **150 hours**

BASIC CNC LATHE OPERATION
(Z)MTT-101 **$645**

Teaches basic set up and operation of CNC lathes. Preparation NIMS Level I certificate: CNC Lathe Operation.
Co-requisite: (Z)MTT-100 **30 hours**

INTRODUCTION TO MACHINING
(Z)MTT-105 **$1,920 (textbook additional)**

Theoretical and practical aspects of shop safety, hand tools, precision layout, precision measuring instruments, taps, dies, files, reamers, and identification and use of appropriate materials to manufacture parts are covered. Preparation for two NIMS Level I certifications: Measurement, Materials and Safety; Layout and Bench work. **75 hours**

BASIC MACHINE TOOLS
(Z)MTT-110 **$1,920 (textbook additional)**

Basic operations of the drill press, pedestal grinder and band saw will be covered. Preparation for the NIMS Level I certification: Drill Press. **75 hours**

Precision Machining Level 2

TURNING TECHNOLOGY LEVEL I
(Z)MTT-157 **$1,920 (textbook additional)**

Knowledge, practical learning experience and accident prevention awareness required to perform conventional lathe job planning, set-up and operation. Aspects of conventional, carbide and other tooling materials selection, preparation, and usage will be covered. Preparation to take NIMS Level I certification: Turning between Centers and Chucking. **75 hours**

MILLING TECHNOLOGY LEVEL I
(Z)MTT-158 **$1,920 (textbook additional)**

Knowledge and skills necessary to identify and safely use various milling cutters and other tools that are adapted to milling machines. This course covers conventional milling machine parts and controls, the function of each part and control and techniques so that students can operate the machines safely and with a high degree of accuracy. Preparation to take the NIMS Level I certification: **75 hours**

BLUEPRINT READING
(Z)MTT-132 **$1,865 (textbook additional)**

Teaches necessary skills to interpret part drawings. Emphasis will be placed on stimulating the students' creativity and the ability to visualize the drawn object. This course will start with simple part drawings and advance to more complex part drawings. **75 hours**

CNC PROGRAMMING
(Z)MTT-180 **$1,865 (textbook additional)**

Introduction to "G"and "M" code programming for Milling and Turning. Teaches theory designed to successfully start programming CNC Mills and Turning Centers. This program is recommended for the student who wants to further their knowledge in CNC Programming. **75 hours**

Flexible start times available

These courses have an open start date.
Contact Judith Vecchio at 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

Precision Machining Level 3

MILLING TECHNOLOGY LEVEL II (Z)MTT-212
Time: 75 hours
Cost: $1,920 (textbook additional)

Knowledge and skills necessary to identify and safely use various milling cutters and other tools that are adaptable to milling machines. Students learn to set up work pieces to be properly machined. Preparation for NIMS Level II certification: Milling.

TURNING TECHNOLOGY LEVEL II (Z)MTT-225
Time: 75 hours
Cost: $1,920 (textbook additional)

Knowledge, practical learning experience and accident prevention awareness required to perform advanced conventional lathe job planning, set-up and operation. Aspects of conventional, carbide and other tooling materials selection, preparation, and usage will be covered. Preparation for NIMS Level II certification: Turning between Centers and Chucking.

CNC MILL LEVEL I (Z)MTT-185
Time: 75 hours
Cost: $2,030

Teaches FANUC "G" and "M" code programming along with set-up and operation of CNC MIlling Centers. Designed by FANUC to teach CNC Programming, Set-up and Operation for Machining Centers. Preparation for NIMS CNC Milling Level 1 Programming and Operation exam.

FANUC CERTIFIED EDUCATION CNC TRAINING

NIMS® National Institute for Metalworking Skills®

ENGINEERING GRAPHICS WITH SOLIDWORKS
ZMTT 107
Average time for course completion: 45 hours
Investment: $1,315

Learn to use **Solidworks** to draw 3D part models, 2D part drawings, parametric parts, part assemblies and basic simulation. Exercises include sketching, extruding parts, editing parts, moving assemblies. Students will learn the foundation skills of **Solidworks.**

Flexible start times available

These courses have an open start date.
Contact Judith Vecchio at610.372.4721, ext 5716 or jvecchio@racc.edu for details.

Precision Machining Level 4

Plus General Education Requirements*

CNC MILLING II
(Z)MTT-272 **$2,030**

Designed by FANUC to teach FANUC MACRO Programming. Preparation for NIMS CNC Milling Level II Programming and Operation exam. **75 hours**

CAM PROGRAMMING
(Z)MTT-288 **$1,865**

Teaches skills of Computer Aided Manufacturing (CAM) programming using MasterCAM software. Students will learn how to create 2D mill, 3D mill and lathe part geometries and toolpaths. Students will also use the software to create CNC part programs and be able to verify their toolpaths. **75 hours**

***Gen Ed Courses AAS Degree**	**25 cr.**
CSS 103 College Success Strategies	3 cr.
MAT 165 Math Trigonometry	3 cr.
IFT 110 Microcomputer Applications	3 cr.
SOC 130 Sociology	3 cr.
COM 121 or 122 English Composition	3 cr.
COM 141 Technical Writing	3 cr.
PHY 240 Physics I	4 cr.
Humanities Elective	3 cr.

Precision Machining Level 4 Electives - Select One

GRINDING TECHNOLOGY
(Z)MTT-221 **$1,920 (textbook additional)**

Teaches theoretical and the practical skills development in precision grinding operations. Students will learn to safely use a surface grinder, applying various techniques to make metal parts to blueprint specifications. Preparation for NIMS Level I & Level II certification in grinding.

75 hours

ADVANCED CNC TURNING
(Z)MTT-276 **$2,030**

Designed by FANUC to teach "G" and "M" code programming along with setup and operation of CNC Turning Centers. Preparation for NIMS CNC Turning Level 1 Programming and Operation exam. **75 hours**

FIXTURE DESIGN - CAD EXPERIENCE PREFERRED
(Z)MTT-265 **$1,370 (textbook additional)**

Teaches CAD software design of production ready jigs and fixtures. Design features and methods will be discussed.

45 hours

Flexible start times available

These courses have an open start date.
Contact Judith Vecchio at 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

COMPUTER AIDED DESIGN (CAD)/QUALITY

AUTOCAD – ZMTT 310

Average time for course completion: 36 hours
Investment: $910

For the new user who needs comprehensive training in AutoCAD, edit and publish drawings with AutoCAD. No previous CAD experience necessary. Drafting, design or engineering experience a plus. **Prerequisite: Working knowledge of the Windows-based operating system.**

ENGINEERING GRAPHICS WITH SOLIDWORKS ZMTT 107

Average time for course completion: 45 hours
Investment: $1,315

Learn to use **Solidworks** to draw 3D part models, 2D part drawings, parametric parts, part assemblies and basic simulation. Exercises include sketching, extruding parts, editing parts, moving assemblies. Students will learn the foundation skills of **Solidworks.**

AUTODESK FUSION 360 ZMTT 330

Average time for course completion: 45 hours
Investment: $1,315

Learn to use Autodesk Fusion 360 to create 3D part models, 2D part drawings and assemblies.

Mitutoyo CRYSTA-Apex V544 CNC Coordinate Measuring Machine

The CRYSTA-Apex V series is a new generation CNC CMM that delivers great versatility and speed while leveraging IoT technologies for smart factory opportunities. The CRYSTA-Apex V provides accuracy that is unmatched by any previous general purpose measuring machine for small to mid-sized workpieces.

- SMS (Smart Measuring System) – system for on-line monitoring and operational status of a measuring machine with data visualization to enable product quality improvement
- Real-time CMM and workpiece temperature compensation (standard feature)
- High-speed optimal path scanning with high-speed active scanning
- Multi-sensor support with an array of contact and non-contact probes that includes tactile, scanning, laser, optical, surface finish measuring

AUTODESK INVENTOR ZMTT 320

Average time for course completion: 45 hours
Investment: $1,315

Learn to use Autodesk Inventor to create 3D part models, 2D part drawings and assemblies.

Contact Judith Veccchio at 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

Hand Tools, Safety, Quality

MECHANICAL FABRICATION BASIC SKILLS – ZTEC 390

Average time for course completion: 32 hours
Investment: $675

LAP 1 Threaded Fasteners
LAP 2 Wrenches
LAP 3 Pneumatic System Fabrication
LAP 4 Screwdrivers
LAP 5 Pliers and Locking Devices
LAP 6 Mallets and Non-Threaded Fasteners
LAP 7 Torque Wrenches
LAP 8 Portable Power Tools

BLUEPRINT READING 1 – ZTEC 516

Average time for course completion: 12 hours
Investment: $305

LAP 1 Multiview Drawings
LAP 2 Sectional Drawings and Fasteners
LAP 3 Geometric Dimensioning and Tolerancing

MANUFACTURING PROCESSES – ZTEC 548

Average time for course completion: 36 hours
Investment: $1,140
Prerequisite: ability to read blueprints

LAP 1 Band Saw Operation
LAP 2 Intro to the Drill Press
LAP 3 Drill Press Operations
LAP 4 Intro to Manufacturing Hand Tools
LAP 5 Intro to the Manual Milling Machine
LAP 6 Milling Processes
LAP 7 Intro to the Manual Lathe
LAP 8 Turning Operations
LAP 9 Lathe Operations

QUALITY ASSURANCE – ZTEC 500

Average time for course completion: 44 hours
Investment: $1,320
Prerequisite: ability to read blueprints

LAP 1 Basic Measurement
LAP 2 Precision Measurement Tools
LAP 3 Dimensional Gauging
LAP 4 Introduction to Statistical Process Control (SPC)
LAP 5 Control Chart Operation
LAP 6 Control Chart Analysis
LAP 7 SPC Problem Solving
LAP 8 Geometric Dimensioning and Tolerancing
LAP 9 Location Tolerances
LAP 10 Orientation Tolerances
LAP 11 Form Tolerances

INTRODUCTION TO SHOP MACHINERY – ZTEC 558

Average time for course completion: 90 hours 3 college credits.
Investment: $2,625

- Quality Assurance
  - Basic Measurement, Precision Measurement, Dimensional Gauging
  - Inroduction to SPC, SPC Problem Solving
  - Control Chart Operation, Control Chart Analysis
  - Geometric Dimensioning and Tolerancing
  - Location, Form and Orientation Tolerances
- Blueprint Reading
- Solid Drawing Modeling
  - Solid Model creation using Solidworks
  - Assembly creation using Solidworks
- Manual Machine Tools
  - Introduction to the Drill Press, Drill Press Operations
  - Introduction to the Milling Machine, Milling Operations
  - Introduction to the Manual Lathe, Lathe Operations
- OSHA 10-Hour General Industry Safety Course

MECHANICAL AND ELECTRICAL FABRICATION – MET 090/ZTEC 567

Average time for course completion: 45 hours
Investment: $899

LAP 1 Basic Measurement
LAP 2 Threaded Fasteners
LAP 3 Wrenches
LAP 4 Pneumatic System fabrication
LAP 5 Screwdrivers
LAP 6 Pliers and Locking Devices
LAP 7 Mallets and Non-Threaded Fasteners
LAP 8 Torque Wrenches
LAP 9 Portable Power Tools
LAP 10 Basic Electrical Circuits
LAP 11 Electrical Measurements

These courses have an open start date.
Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

Hydraulics

BASIC HYDRAULICS – ZTEC 300
Average time for course completion: 20 hours
Investment: $585
LAP 1 Hydraulic Power Systems
LAP 2 Basic Hydraulic Circuits
LAP 3 Principles of Hydraulic Pressure and Flow
LAP 4 Hydraulic Speed Control
LAP 5 Pressure Control Circuits

INTERMEDIATE HYDRAULICS – ZTEC 301
Average time for course completion: 25 hours
Investment: $670
LAP 1 Hydraulic DCV Applications
LAP 2 Hydraulic Cylinder Applications
LAP 3 Hydraulic Relief Valve Operation
LAP 4 Hydraulic Check Valve Applications
LAP 5 Accumulator Applications

ADVANCED HYDRAULICS – ZTEC 302
Average time for course completion: 15 hours
Investment: $399
LAP 1 Hydraulic Motor Applications
LAP 2 Hydraulic Pump and Motor Performance
LAP 3 Fluids and Conditioning

HYDRAULIC TROUBLESHOOTING – ZTEC 308
Average time for course completion: 45 hours
Investment: $1,230
LAP 1 Introduction to Pressure-Compensated Pumps
LAP 2 Pressure-Compensated Pump Performance
LAP 3 Troubleshooting Hydraulic Pumps
LAP 4 Troubleshooting Hydraulic Actuators
LAP 5 Troubleshooting Hydraulic DCVs
LAP 6 Troubleshooting Flow Control and Check Valves
LAP 7 Troubleshooting Pressure Control Valves
LAP 8 Troubleshooting Unloader and Counter balance Valves
LAP 9 Troubleshooting Hydraulic Systems

HYDRAULIC MAINTENANCE - ZTEC 3017
Average time for course completion: 20 hours
Investment: $670
LAP 1 Hydraulic Filter Maintenance
LAP 2 Hydraulic Fluid Maintenance
LAP 3 Fittings and Seals
LAP 4 Hose and Clamping Devices
LAP 5 Tubing and Component Installation

Rigging

RIGGING SYSTEMS 1 – ZTEC 357
Average time for course completion: 35 hours Investment: $890
LAP 1 Introduction to Rigging
LAP 2 Hoists
LAP 3 Slings and Lifting
LAP 4 Wire Rope
LAP 5 Chain Slings
LAP 6 Fiber Rope
LAP 7 Industrial Cranes

RIGGING SYSTEMS 2 – ZTEC 358
Average time for course completion: 15 hours
Investment: $395
LAP 1 Wire Mesh Slings
LAP 2 Synthetic Slings
LAP 3 Equipment Movement

Pneumatics

BASIC PNEUMATICS – ZTEC 305
Average time for course completion: 16 hours
Investment: $450
LAP 1 Pneumatic Power Systems
LAP 2 Basic Pneumatic Circuits
LAP 3 Principles of Pneumatic Pressure and Flow
LAP 4 Pneumatic Speed Control Circuits

INTERMEDIATE PNEUMATICS – ZTEC 306
Average time for course completion: 15 hours
Investment: $395
LAP 1 Pneumatic DCV Applications
LAP 2 Air Logic
LAP 3 Pneumatic Maintenance

ADVANCED PNEUMATICS – ZTEC 307
Average time for course completion:15 hours Investment: $395
LAP 1 Moving Loads Pneumatically
LAP 2 Vacuum Systems
LAP 3 Air Compressors

PNEUMATIC TROUBLESHOOTING – ZTEC 309
Average time for course completion: 35 hours
Investment: $960
LAP 1 Pneumatic Troubleshooting
LAP 2 Air Preparation Troubleshooting
LAP 3 Troubleshooting Pneumatic Cylinders
LAP 4 Motor & Rotary Actuator Troubleshooting
LAP 5 Troubleshooting DCV & Flow Control Valves
LAP 6 Troubleshooting Vacuum Systems
LAP 7 Troubleshooting Pneumatic Systems

PNEUMATIC SYSTEM CONSTRUCTION – ZTEC 324
Average time for course completion: 4 hours
Investment: $175

Lubrication

CENTRAL LUBRICATION – ZTEC 318
Average time for course completion: 20 hours
Investment: $545
LAP 1 Introduction to Central Lubrication
LAP 2 Lubrication Concepts
LAP 3 Simple Series/Progressive Lubrication System
LAP 4 Troubleshooting Series/Progressive Lubrication Systems
LAP 5 Piston Distributor Lubrication Systems

Mechanical Drives

Pumps, Piping

MECHANICAL DRIVES 1 – ZTEC 311 is a prerequisite for ALL Mechanical Drives and Pumps courses on this page.

MECHANICAL DRIVES 1 – ZTEC 311
Average time for course completion: 35 hours
Investment: $985
LAP 1 Intro to Mechanical Drive Systems
LAP 2 Key Fasteners
LAP 3 Power Transmission Systems
LAP 4 Intro to V-Belt Drives
LAP 5 Intro to Chain Drives
LAP 6 Spur Gear Drives
LAP 7 Multiple Shaft Drives

MECHANICAL DRIVES 2 – ZTEC 312
Average time for course completion: 35 hours
Investment: $985
LAP 1 Heavy-Duty V-Belt Drives
LAP 2 V-Belt Selection and Maintenance
LAP 3 Synchronous Belt Drives
LAP 4 Lubrication Concepts
LAP 5 Precision Shaft Alignment
LAP 6 Couplings
LAP 7 Heavy-Duty Chain Drives

MECHANICAL DRIVES 3 – ZTEC 313
Average time for course completion: 35 hours
Investment: $985
LAP 1 Plain Bearings
LAP 2 Ball Bearings
LAP 3 Roller Bearings
LAP 4 Antifriction Bearing Selection and Maintenance
LAP 5 Gaskets and Seals
LAP 6 Advanced Gear Drives
LAP 7 Gear Drive Selection and Maintenance

MECHANICAL DRIVES 4 – ZTEC 314
Average time for course completion: 20 hours
Investment: $565
LAP 1 Brakes and Clutches
LAP 2 Brake/Clutch Selection and Maintenance
LAP 3 Linear Ball Bushings
LAP 4 Ball Screw Drives

FLOOR STANDING CONVEYORS – ZTEC 315
Average time for course completion: 4 hours
Investment: $175

VIBRATION ANALYSIS – ZTEC 316
Average time for course completion: 12 hours
Investment: $385
LAP 1 Intro to vibration analysis
LAP 2 Vibration condition monitoring
LAP 3 Vibration analysis

These courses have an open start date.
Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

LASER ALIGNMENT – ZTEC 317
Average time for course completion: 8 hours
Investment: $265
LAP 1 Intro to laser shaft alignment
LAP 2 Laser shaft alignment operation

CENTRIFUGAL PUMP SYSTEMS – ZTEC 319
Average time for course completion: 20 hours
Investment: $580
LAP 1 Centrifugal Pump Operation
LAP 2 Centrifugal Pump Characteristics
LAP 3 Centrifugal Pump Troubleshooting
LAP 4 System Characteristics
LAP 5 Centrifugal Pump Performance

DIAPHRAGM PUMP – ZTEC 320
Average time for course completion: 4 hours
Investment: $175

PERISTALTIC PUMP – ZTEC 321
Average time for course completion: 4 hours
Investment: $175

MAGNETIC PUMP – ZTEC 322
Average time for course completion: 4 hours
Investment: $175

CENTRIFUGAL PUMP /STUFFING BOX – ZTEC 323
Average time for course completion: 4 hours
Investment: $175

MULTIPLE PUMP LEARNING SYSTEM – ZTEC 352
Average time for course completion: 4 hours
Investment: $175

GEAR PUMP – ZTEC 353
Average time for course completion: 4 hours
Investment: $175

PISTON PUMP – ZTEC 354
Average time for course completion: 4 hours
Investment: $175

TURBINE PUMP – ZTEC 372
Average time for course completion: 4 hours
Investment: $175

PIPING SYSTEMS – ZTEC 310
Average time for course completion: 35 hours
Investment: $1,020
LAP 1 Metal Piping Systems
LAP 2 Metal Piping Installation
LAP 3 Plastic Piping Systems
LAP 4 Metal Tubing Systems
LAP 5 Hoses
LAP 6 Two-Way Valves
LAP 7 Check Valves and Sloan Valves

Electrical Systems, Controls, Rotating Equipment

AC/DC ELECTRICAL SYSTEM – ZTEC 205
NEW TO ELECTRICAL? START HERE.
Average time for course completion: 30 hours
Investment: $825
LAP 1 Basic Electrical Circuits
LAP 2 Electrical Measurements
LAP 3 Circuit Analysis
LAP 4 Inductance and Capacitance
LAP 5 Combination Circuits
LAP 6 Transformers

ELECTRIC MOTOR CONTROL – ZTEC 207
Average time for course completion: 50 hours
Investment: $1,370
LAP 1 Introduction to Electric Motor Control
LAP 2 Manual Motor Control and Overload Protection
LAP 3 Control Transformers Control
LAP 4 Ladder Logic
LAP 5 Control Relays and Motor Starters
LAP 6 Introduction to Troubleshooting
LAP 7 System Troubleshooting
LAP 8 Reversing Motor Control
LAP 9 Automatic Input Devices
LAP 10 Basic Timer Control: On-Delay and Off-Delay

ADVANCED ELECTRIC MOTOR CONTROLS – ZTEC 208
Average time for course completion: 50 hours
Investment: $1,370
LAP 11 Motor Braking System
LAP 12 Reduced Voltage Starting Circuits
LAP 13 Power Generation and Distribution
LAP 14 Electronic Sensors
LAP 15 Timers and Counters
LAP 16 Variable Frequency AC Drive
LAP 17 Variable Frequency AC Drive, Speed & Torque Control
LAP 18 Variable Frequency Drives Acceleration, Deceleration, & Braking
LAP 19 Variable Frequency Drives Fault Diagnostics and troubleshooting

ELECTRICAL CONTROL SYSTEM WIRING – ZTEC 209
Average time for course completion: 10 hours
Investment: $325 (Allen Bradley or Siemens)
LAP 1 Introduction to Electrical Control Wiring
LAP 2 Electrical Control System Wiring
LAP 3 Pneumatic Control Circuit Wiring
Prerequisite ZTEC 205 & 207

ELECTRICAL RELAY CONTROL SYSTEMS – ZTEC 231
Average time for course completion: 15 hours
Investment: $395
LAP 1 Control Logic
LAP 2 Sequencing Control
LAP 3 Timers and Advanced Systems

PLC AND VFD ELECTRICAL CONTROL WIRING - ZTEC- 267
Average time for course completion: 5 hours
Investment: $175
Prerequisite ZTEC 209 Electrical Control System Wiring

These courses have an open start date.
Contact Judith Vecchio at 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

Electrical Systems, Controls, Rotating Equipment

ROTATING ELECTRICAL MACHINES – ZTEC 206
Average time for course completion: 32 hours
Investment: $910
LAP 1 DC Series Motors
LAP 2 DC Shunt and Compound Motors
LAP 3 Motor Speed and Torque
LAP 4 Motor Performance
LAP 5 Split-Phase AC Motors
LAP 6 Capacitor-Start AC Motors
LAP 7 Permanent-Capacitor and Two-Capacitor Motors
LAP 8 Three-Phase AC Induction Motors

ROTATING ELECTRICAL MACHINES DC GENERATORS – ZTEC 250
Average time for course completion: 8 hours
Investment: $265
LAP 9 DC Generators
LAP 10 Wound-Rotor Motors

ROTATING ELECTRICAL MACHINES – ALTERNATORS/SYNCHRONOUS MOTORS – ZTEC 251
Average time for course completion: 12 hours
Investment: $385
LAP 11 Alternators
LAP 12 Alternator Synchronization Methods
LAP 13 Synchronous Motors

ELECTRICAL POWER DISTRIBUTION – ZTEC 210
Average time for course completion: 25 hours
Investment: $699
LAP 1 Introduction to Raceways
LAP 2 Basic Conduit Bending
LAP 3 Advanced Raceways
LAP 4 Conductors, Disconnects and Overcurrent Protection
LAP 5 Conduit Sizing and Wire Pulling Techniques

ELECTRICAL FABRICATION – ZTEC 253
Average time for course completion: 12 hours
Investment: $270
LAP 1 Introduction to Electrical System
LAP 2 Residential Wiring System Components
LAP 3 Service Connections and Circuit Protection

ELECTRO-FLUID POWER SYSTEM – ZTEC 303
Average time for course completion: 40 hours
Investment: $1,055
LAP 1 Introduction to Electrical Control Systems
LAP 2 Basic Control Devices
LAP 3 Power Devices
LAP 4 Control Relays
LPA 5 Sequencing Control
LAP 6 Timer Control
LAP 7 Pressure Control Applications
LAP 8 Circuit Applications

ELECTRONIC SENSORS – ZTEC 304
Average time for course completion: 8 hours
Investment: $265
LAP 1 Introduction to Electronic Sensors
LAP 2 Electronic Sensor Applications

POWER & CONTROL ELECTRONICS – ZTEC 252
Average time for course completion: 50 hours
Investment: $1,340
LAP 1 Oscilloscopes
LAP 2 Linear Power Supplies
LAP 3 Power Supply Filtration and Regulation
LPA 4 Solid State Relays
LAP 5 Discrete Sensing Devices
LAP 6 Thermal Sensing Devices
LAP 7 Amplifiers and Operational Amplifiers
LAP 8 Analog Sensing Devices
LAP 9 Solid State Switching
LAP 10 Solid State Speed and Power Control

AC ELECTRONIC DRIVES – ZTEC 400
Average time for course completion: 35 hours
Investment: $985
LAP 1 Introduction to AC Drives
LAP 2 Configuring A-B PowerFlex 70 Drives
LAP 3 A-B PowerFlex 70 Control Parameters
LAP 4 Communications and Diagnostics for A-B PowerFlex 70 Drives
LAP 5 Troubleshooting A-B PowerFlex 70 Drives
LAP 6 Configuring and Troubleshooting the A-B PowerFlex 40 Drive
LAP 7 Configuring and Troubleshooting Servo Drives

DC ELECTRONIC DRIVES – ZTEC 401
Average time for course completion: 30 hours
Investment: $830
LAP 1 Introduction to DC Motion Control
LAP 2 Basic DC Drives - SCR Control
LAP 3 DC Spindle Drives
LAP 4 DC Axis Drives
LAP 5 DC Pulse Width Modulation Drives
LAP 6 DC Drive Troubleshooting

Allen - Bradley

AC/DC ELECTRICAL SYSTEMS ZTEC 205 AND ELECTRIC MOTOR CONTROL ZTEC 207 ARE PREREQUISITE COURSES FOR PLC TRAINING.

Allen-Bradley

PLC ALLEN-BRADLEY SLC500 W/ TROUBLESHOOTING – ZTEC 402

Average time for course completion: 80 hours
Investment: $2,230

LAP 1 Introduction to Programmable Controllers
LAP 2 Basic PLC Programming
LAP 3 PLC Motor Control
LAP 4 Discrete I/O Interfacing
LAP 5 Intro to PLC Troubleshooting
LAP 6 PLC Systems Troubleshooting
LAP 7 Event Sequencing
LAP 8 Application Development
LAP 9 PLC timer instructions
LAP 10 PLC counter instructions
LAP 11 Program Control Instructions
LAP 12 Math and Data Move Instructions

PLC ALLEN- BRADLEY SLC500 ANALOG APPLICATION SYSTEM – ZTEC 403

Average time for course completion: 15 hours
Investment: $430

LAP 13 Analog Input Modules
LAP 14 Analog Output Modules
LAP 15 Analog Scaling

PLC ALLEN-BRADLEY SLC500 DATA HIGHWAY 485 – ZTEC 404

Average time for course completion: 10 hours
Investment: $270

LAP 16 Introduction to DH-485
LAP 20 Remote I/O

PLC ALLEN-BRADLEY SLC500 PANELVIEW PLUS 1000 DH-485 SYSTEM W/ KEY PAD – ZTEC 405

Average time for course completion: 15 hours
Investment: $430

LAP 17 Introduction to Panelview
LAP 18 Panelview Application Editing 1
LAP 19 Panelview Application Editing 2

NOW IN A STUDIO 5000 ENVIRONMENT

PLC ALLEN-BRADLEY CONTROLLOGIX PROGRAMMING WITH TROUBLESHOOTING – ZTEC 406

Average time for course completion: 80 hours
Investment: $2,230

LAP 1 Introduction to Programmable Controllers
LAP 2 Basic PLC Programming
LAP 3 PLC Motor Control
LAP 4 Discrete I/O Interfacing
LAP 5 PLC Timer Instructions
LAP 6 PLC Counter Instructions
LAP 7 Introduction to PLC Troubleshooting
LAP 8 PLC Systems Troubleshooting
LAP 9 Event Sequencing
LAP 10 Application Development
LAP 11 Program Control Instructions
LAP 12 Math and Data Move Instructions

PLC ALLEN-BRADLEY CONTROLLOGIX ANALOG INPUT/OUTPUT – ZTEC 407

Average time for course completion: 20 hours
Investment: $580

LAP 13 Analog Input Modules
LAP 14 Analog Input Configuration and Troubleshooting
LAP 15 Analog Output Modules
LAP 16 Analog Output Configuration and Troubleshooting

These courses have an open start date.
Contact Judith Vecchio at 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

Allen - Bradley (cont.)

PLC ALLEN- BRADLEY PANELVIEW PLUS 7 APPLICATIONS – ZTEC 408
Average time for course completion: 15 hours
Investment: $420
LAP 1 Introduction to PanelView Plus 7
LAP 2 PanelView Plus Application Editing 1
LAP 3 PanelView Plus Application Editing 2

PLC ALLEN-BRADLEY CONTROLLOGIX ETHERNET
ZTEC 411
Average time for course completion: 25 hours
Investment: $580
LAP 1 Industrial Communications Networks
LAP 2 Remote Input/Output
LAP 3 Produced/Consumed Data and Messages
LAP 4 Troubleshooting EtherNet/IP

PLC ALLEN-BRADLEY DEVICENET FOR CONTROLLOGIX – ZTEC 429
Average time for course completion: 15 hours
Investment: $420
LAP 1 Industrial Communication Networks
LAP 2 DeviceNet Input/Output
LAP 3 DeviceNet Troubleshooting

PLC ALLEN-BRADLEY CONTROLNET FOR CONTROLLOGIX – ZTEC 430
Average time for course completion: 15 hours
Investment: $420
LAP 1 Industrial Communications Networks
LAP 2 Remote Input/Output
LAP 3 Produced/Consumed Data and Messages

PLC ALLEN-BRADLEY COMPACTLOGIX - L16
ZTEC 454
Average time for course completion: 80 hours
Investment: $2,230
LAP 1 Introduction to Programmable Controllers
LAP 2 Basic PanelView Terminal Operartion
LAP 3 PLC Program Operations
LAP 4 PLC Programming
LAP 5 PLC Motor Control
LAP 6 PLC Timer and Counter Instructions
LAP 7 Event Sequencing
LAP 8 Program Control Instructions
LAP 9 Math and Data Move Instructions
LAP 10 PanelView Plus Application Editing
LAP 11 PanelView Plus Application Editing 2
LAP 12 Analog Inputs
LAP 13 Analog Outputs
LAP 14 Variable Output Applications

PLC TROUBLESHOOTING ALLEN BRADLEY COMPACTLOGIX - L16
ZTEC 455
Average time for course completion: 20 hours
Investment: $580
LAP 1 Introduction to PLC Troubleshooting
LAP 2 PLC Systems Troubleshooting
LAP 3 Analog Input/Output Troubleshooting
LAP 4 Analog Application Troubleshooting

Allen-Bradley

These courses have an open start date.
Contact Judith Vecchio at 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

Siemens

Instrumentation and Process Control

SIEMENS

TIA PORTAL/57-1200 AVAILABLE. SEE PAGE 3

AC/DC ELECTRICAL SYSTEMS ZTEC 205 AND ELECTRIC MOTOR CONTROL ZTEC 207 ARE PREREQUISITE COURSES FOR PLC TRAINING.

PLC SIEMENS S7-300 LEARNING SYSTEM WITH TROUBLESHOOTING - ZTEC 412

Average time for course completion: 80 hours
Investment: $2,230

LAP 1 Introduction to Programmable Controllers
LAP 2 Basic PLC Programming
LAP 3 PLC Motor Control
LAP 4 Discrete I/O Interfacing
LAP 5 PLC Timer Instructions
LAP 6 PLC Counter Instructions
LAP 7 Introduction to PLC Troubleshooting
LAP 8 PLC Systems Troubleshooting
LAP 9 Event Sequencing
LAP 10 Application Development
LAP 11 Program Control Instructions
LAP 12 Math and Data Move Instructions

SIEMENS PLC ANALOG LEARNING S7-300 – ZTEC 413

Average time for course completion: 25 hours
Investment: $580

LAP 13 Analog Input Modules
LAP 14 Analog Input Applications and Troubleshooting
LAP 15 Analog Output Modules
LAP 16 Analog Output Applications and Troubleshooting

PLC PROFIBUS SYSTEM SIEMENS S7 – ZTEC 414

Average time for course completion: 15 hours
Investment: $405

LAP 1 Industrial Comm Network (Siemens S7-300 Profibus)
LAP 2 Data Exchange

PLC SIEMENS TP1200 OPERATOR PANEL LEARNING SYSTEM – ZTEC 415

Average time for course completion: 15 hours
Investment: $420

LAP 1 Introduction to Siemens HMI Panel
LAP 2 Application Editing 1
LAP 3 Application Editing 2

PLC SIEMENS S7-300 REMOTE I/O – ZTEC 444

Average time for course completion: 5 hours
Investment: $175

LAP 1 - Remote Input/Output

LEVEL AND FLOW PROCESS CONTROL – ZTEC 416

Average time for course completion: 60 hours
Investment: $1,570

LAP 1 Introduction to Process Control
LAP 2 Instrument Tags
LAP 3 Piping and Instrumentation Diagrams
LAP 4 Loop Controllers
LAP 5 Final Control Elements
LAP 6 Level Measurement
LAP 7 Liquid Level Control
LAP 8 Methods of Automatic Control
LAP 9 Basic Flow Measurement and Control
LAP 10 Control Loop Performance
LAP 11 Ultrasonic Level Measurement and Control
LAP 12 Differential Pressure Flow Measurement and Control

THERMAL PROCESS CONTROL – ZTEC 417

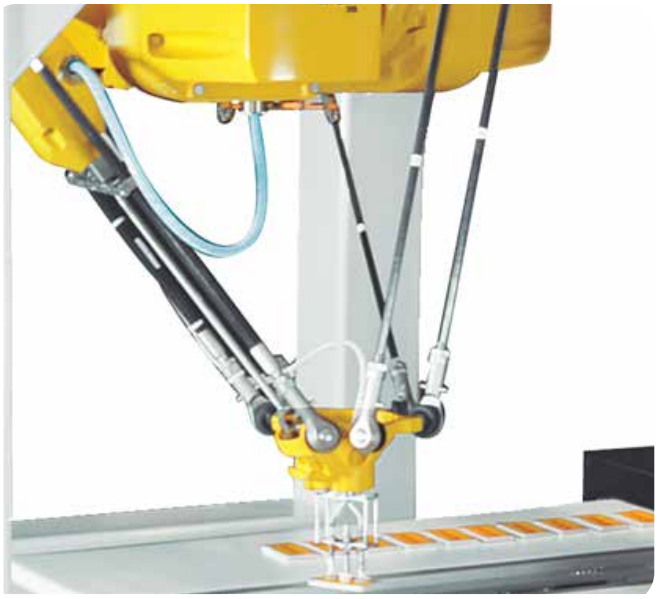
Average time for course completion: 60 hours
Investment: $1,570

LAP 1 Introduction to Process
LAP 2 Control Instrument Tags
LAP 3 Piping and Instrumentation Diagrams
LAP 4 Thermal Energy
LAP 5 Basic Temperature Control Elements
LAP 6 Loop Controllers
LAP 7 Final Control Elements
LAP 8 Temperature Sensors and Transmitters
LAP 9 Temperature Transmitters
LAP 10 Basic Temperature Control
LAP 11 Methods of Automatic Control
LAP 12 Control Loop Performance

These courses have an open start date.
Contact Judith Vecchio at 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

INDIVIDUAL COURSES - UPGRADE YOUR SKILLS

Automation has crossed into all facets of modern manufacturing in an effort to produce items that are more accurately made and less costly to manufacture. The workforce required to support these industries, both now and in the future, will need to develop additional skills.



MOTION CONTROL (SERVO) LEARNING SYSTEM – ZTEC 520

Average time for course completion: 36 hours
Investment: $1,270

Teaches the fundamentals of current industrial servo drive systems. Servo drives are the core components to precise positioning in packaging, labeling, conveying and CNC machining environments.

LAP 1 AC Motion Control
LAP 2 Drive Configuration, Tuning and Operation
LAP 3 Motion Control System Configuration
LAP 4 Motion Control System Programming
LAP 5 Position Control
LAP 6 Velocity and Current Control

MOTION CONTROL (SERVO) LEARNING SYSTEM 2 – ZTEC 521

Average time for course completion: 24 hours
Investment: $845

PREREQUISITE ZTEC 520 - MOTION CONTROL (SERVO) LEARNING SYSTEM

Teaches multi-axis servo drive configurations as essential for synchronizing multiple operations in packaging, labeling, conveying, CNC machining environments and warehouse management systems.

LAP 1 Multi-Axis Motion Control
LAP 2 Motion Control Camming
LAP 3 Synchronized Motion

**** COMING SOON****

UNIVERSAL ROBOTS UR3E

The UR3e is the ideal definition of a collaborative, industrial robot. Designed to optimize efficiency in confined workspaces, the UR3e offers unmatched flexibility and precision. While the cobot can be mounted on a table working side-by-side with employees, it can also be integrated within a separate workstation for solutions including picking, assembling, and placing parts.

These courses have an open start date.
Contact Judith Vecchio at 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

MOTOMAN MERIT CERTIFIED ROBOT FS100 BASIC PROGRAMMING WITH MATERIAL HANDLING

ZTEC 556

Average time for course completion: 32 Hours

YASKAWA

This training is provided by RACC as a Motoman Merit Certified facility. The course is designed to help students learn to program and Controller using INFORM programming language (similar to the DX100).

- Safety
- Startup and Shutdown
- Pendant overview
- Jogging in all Coordinate Systems
- Copying, Creating, Deleting and Editing Jobs
- Alarm and Error Recovery,
- Programming and Monitoring Input/Output
- Using Math and Position Variables

SUPERVISORS AND MANAGEMENT

INTRO TO MOTOMAN FS100 BASIC PROGRAMMING WITH MATERIAL HANDLING

ZTEC 559

Average time for course completion: 8 Hours
Investment: $415

Learn and understand the features of the FS100 Robot Controller and Programming Pendant using the INFORM programming language.

- Startup and Shutdown
- Tech Pendant Familiarization
- Pendant Screen
- Jogging and Coordinates
- Alarms and errors
- Selecting a Job
- Robot and Tool Path
- Non-Motion Instructions with Demonstration Program

These courses have an open start date.
Contact Judith Vecchio at 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

CompTIA

AVAILABLE IN SPANISH

A+ SERIES: IT ESSENTIALS

Aligns with 220-1001 & 220-1002 CompTIA A+ Certification exams

IT Essentials: PC Hardware and Software covers the fundamentals of PC computer technology, networking, and security, and also provides an introduction to advanced concepts. IT Essentials: PC Hardware and Software is a hands-on, e-learning solution with an emphasis on practical experience to help students develop fundamental computer skills along with essential career skills. This curriculum also helps students prepare for the CompTIA A+ certification.

IT ESSENTIALS - FUNDAMENTALS

ZCOM-336 **$1,815**
Textbook additional fee.
Includes test fee.
Approximate time to complete: 200 hours
Instructor support during lab hours.

IT ESSENTIALS - ADVANCED

ZCOM-337 **$1,815**
Includes test fee.
Prerequisite of ZCOM 336
(use book from ZCOM 336)
Approximate time to complete: 200 hours
Instructor support during lab hours.

SECURITY+

ZCOM-355 **$3,075**
Includes test fee.
Approximate time to complete: 200 hours
Instructor support during lab hours.

CCNA 7.0

Textbook additional fee.
Instructor support during lab hours.

CCNA 7.0 teaches comprehensive networking concepts and skills, from network applications to the protocals and services provided to these applications. Learners will progress from basic networking to more complex enterprise and theoretical networking models later in the curriculum. There are three courses that make up the CCNA 7.0 curriculum - they are aligned to cover the competencies outlined for the CCNA Certification Exam (200-301).

ENTERPRISE NETWORKING, SECURITY, AND AUTOMATION

ZCOM-416 **$1205 for Approx. 90 hours**
Instructor support during lab hours. **(includes exam)**

INTRO TO NETWORKS

ZCOM-413 **$875 for Approx. 90 hours**

SWITCHING, ROUTING AND WIRELESS ESSENTIALS

ZCOM-414 **$875 for Approx. 90 hours**
Instructor support during lab hours.

IIOT

ZCOM-419 **$1,405 for Approx. 90 hours**
Instructor support during lab hours.
After completion of this course students can sit for the 200-601 IMINS2
Prerequisites: Industrial Networking Specialist or CCENT or CCNA Routing and Switching, or any valid CCIE certification.

These courses have an open start date.
Contact Judith Vecchio at 610.372.4721, ext 5716 or jvecchio@racc.edu for details.

Supporting the Training Needs of Pennsylvania's Companies for More Than 20 Years! Formed in 1999 and funded by the Pennsylvania Department of Community and Economic Development, WEDnetPA is the primary delivery system for the Commonwealth's incumbent worker training program. Each year, WEDnetPA serves more than 700 companies and tens-of-thousands of employees, strengthening these businesses and improving Pennsylvania's economy.

Contact David Lerch
to discuss detailed company guidelines and to start the application process for funding.
610.372.4721 x6208 or WEDnet@racc.edu

WEDnetPA
UPSKILLING PENNSYLVANIA'S WORKFORCE

RACC is an authorized WEDnet PA partner.

Company Eligibility

- Must be located in Pennsylvania.
- Must be in an eligible industry cluster, commercial/industrial in nature and not limited or explicitly defined as ineligible in full guidelines.
- Maximum grant amount is $2,000 per employee, up to $100,000 per company per fiscal year.
- Company can only receive funding two years in a row or three out of a five year period.

Employee Eligibility

- Must be a resident of and employed in Pennsylvania.
- Must earn at least $16.74 per hour, excluding benefits.
- Must be permanently employed full-time and eligible for full-time benefits.
- Must be an employee of the specific company location for which a grant is awarded.

Eligible Training

- Must be skill building for current job or advancement.*
- All of RACC's Options include third-party providers, WEDnetPA partners and qualified in-house staff.
- Must start on or after July 1, 2025 and be completed on or before June 30, 2026. Partial training cannot be reimbursed.
- Cost must be "reasonable" as defined in complete guidelines.
- Each course must be a minimum of 30 minutes in length.

** Courses in this catalog are eligible for WEDnet reimbursement.*

OSHA COMPLIANT SAFETY TRAINING TAUGHT AT YOUR FACILITY OR ONLINE.

- OSHA 10 + 30 HOUR - GENERAL INDUSTRY
- LOCKOUT/TAGOUT
- MACHINE GUARDING
- FALL PROTECTION
- CONFINED SPACE
- FIRE EXTINGUISHERS

Meet Our Instructors:

Scot L. Landis – Scot has spent 42 years in the Fire Service. He is a retired Deputy Fire Chief from the City of Reading with 20 years combined experience as a Line and Chief Fire Officer. Since 1990, Scot has been teaching Basic and Advanced Firefighting, OSHA 30 hour and SCBA training. He is a member of the National Professional Qualification Board and is a certified Confined Space and Trench Technical Rescuer.

Charles Zechman III - Chuck has a Bachelor of Science in Occupational Safety and Health with a concentration in Fire Science from Columbia Southern University. He spent 45 years working for a local manufacturing company. He was the Safety and Environmental Manager for 29 years and the Lean lead for five years. He spent 47 years as a firefighter (certified fire instructor) and 30 years as a Technician/Captain for the Berks County Hazmat team and is a certified Hazmat technician. He is an authorized OSHA instructor.

For more information contact Pandora Mazzo at
pmazzo@racc.edu or call 610.372.4721 Ext. 5312

CPR Training for your Workforce

CPR custom training options include:

- **Training at organization sites day or evening**
- **Training on RACC Campus for organizations and individuals**

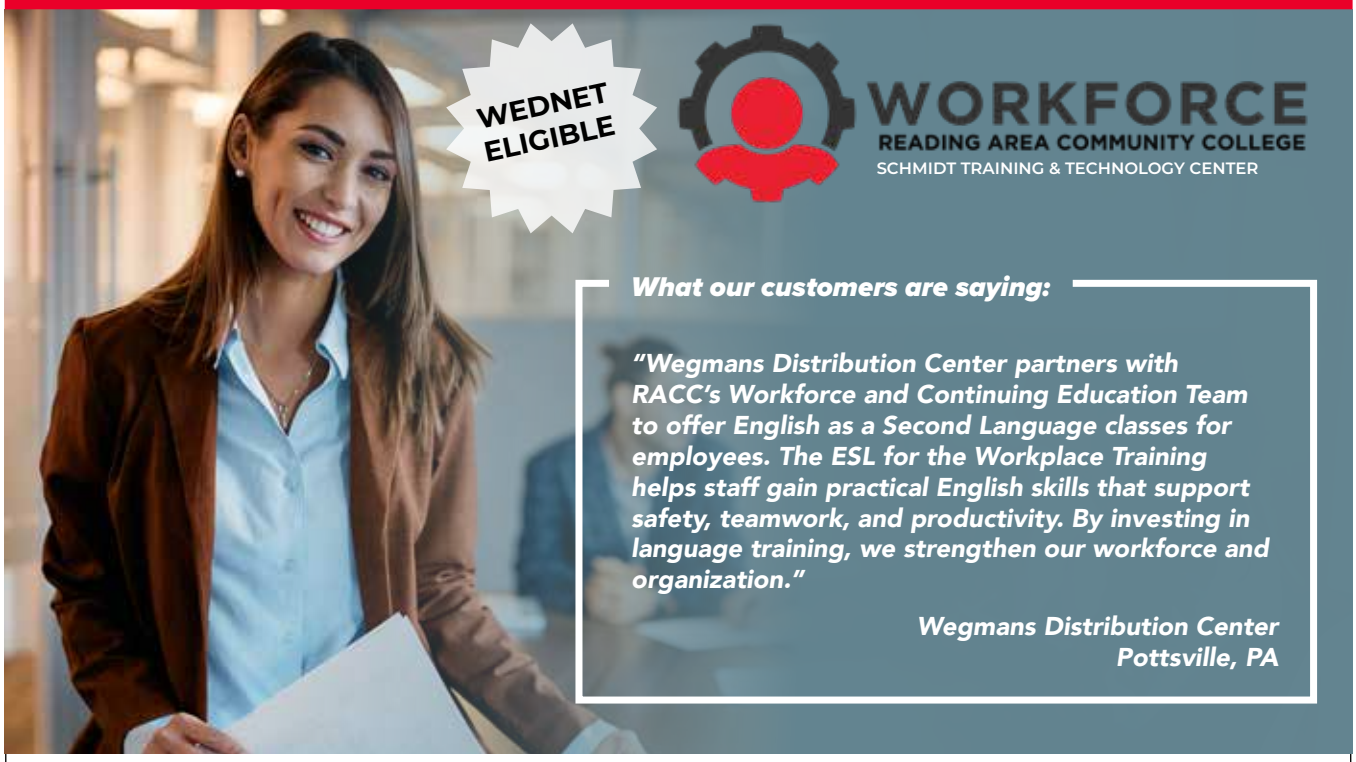
AUTHORIZED TRAINING CENTER

Aligned Training Site

New to the RACC's American Heart Association Training Center-
Basic Life Support Classes in Spanish.

Our Workforce Team delivers custom training solutions that meet your needs. Contact Auria Bradley at *abradley@racc.edu* or call *610.372.4721 Ext 5120*

ESL & SPANISH IN THE WORKPLACE



ESL for the Workplace

Time: 10 – 20 Weeks
CUSTOMIZED training at your facility

- Three levels of training offered:
  - Beginner
  - Intermediate
  - Advanced
- Training is designed to build the English language and conversational skills of employees.
- Training can be customized to meet company needs which can include specific workplace scenarios.

Spanish for the Workplace

Time: 4 Weeks
CUSTOMIZED training at your facility

- Three modules of training offered.
- The training focuses on Basic Spanish language and communication skills for the workplace.
- Training customized to meet the needs of real-life workplace scenarios and processes.
  - » Basic workplace conversations, job expectations and performance discussions, safety and emergency dialogs. These sessions also include an introduction to the Hispanic Culture.

For more information contact Auria Bradley, *Associate Vice President, Workforce and Continuing Education* at *abradley@racc.edu* or call *610.372.4721 Ext. 5120*

Taking the Lead: Skillbuilding for Supervisors and Team Leads

Time: 7 Hrs.
Price: $595

Managers manage tasks – Leaders lead people. Highly effective leaders and team leads know themselves, their teams and their work and utilize this knowledge to consistently achieve results. The "Taking the Lead" program provides experiences, skills and tools to enhance both the mindsets and skillsets of leaders and positions.

Who is this course for?

This 7-hour workshop is designed for supervisors and team leads, specifically those in roles who would like to enhance both their leadership mindsets and skillsets. Participants who attend this training will receive a RACC Workforce certificate upon completion of the class.

Meet Our Instructor:

Jack Tongue is a learning & development leader with over 30 years' experience in the creation, development and delivery of training solutions. Jack's primary areas of focus are leadership, sales and operations. He has facilitated leadership, sales, customer service, coaching, presentation, business writing, communication, and performance management programs.
Jack holds a Masters Degree in Instructional Systems Design from The Pennsylvania State University and a BS in Education from Millersville University. He served as an officer in the United States Marine Corps and was globally deployed.

For a customized training at your facility contact Pandora Mazzo
at *pmazzo@racc.edu or call 610.372.4721 Ext. 5312*

Energy Leadership Training: The Energetic and Influential Leader

Time: 12 Hrs. (four, 3-hour sessions)
Price: $795

Assess yourself with the Energy Leadership Index (ELI), a one-of-kind assessment that will allow you to understand the concept of levels of energy, and how they are related to leadership excellence. You'll then learn how to shift your energy to present yourself in a way that "inspires greatness" in others.

Who is this course for?

This 20-hour workshop is designed for middle management to executive teams. The ideal attendee is any person who has direct reports and wants to develop a whole person approach to leadership. Attendees will walk away with self-awareness, leadership best practices and a toolbox of tools to utilize in various leadership situations. Participants who attend this training will receive a RACC Workforce certificate upon completion of class.

Meet Our Instructor:

Laural Miller is a dynamic leader, trainer, facilitator, and coach. She has 20 years of leadership experience in the Greater Reading Area's business and non-profit sectors.

She holds a Master's Degree in Business Administration and is a proud graduate of RACC and Alvernia University. Laural is also a Professional Certified Coach (PCC) credentialed through the International Coaching Federation. She holds her Executive Wellness Coach certification.

For a customized training at your facility contact Pandora Mazzo
at *pmazzo@racc.edu or call 610.372.4721 Ext. 5312*

The Highly Productive Leader

Time: 12 Hours (three, 4-hour sessions)
Price: $795

This workshop follows a process that develops an effective style of leadership that positively influences and changes those you work and interact with, yourself, and your entire organization.

Key focus areas include:

- Effective coaching techniques
- Communication skills; giving and receiving constructive feedback
- Effective time management strategies
- Understanding and supervising different generations
- Conflict management/ dealing with difficult behaviors

Meet Our Instructor:

Jack Tongue is a learning & development leader with over 30 years' experience in the creation, development and delivery of training solutions. Jack's primary areas of focus are leadership, sales and operations. He has facilitated leadership, sales, customer service, coaching, presentation, business writing, communication, and performance management programs. Jack holds a Masters Degree in Instructional Systems Design from The Pennsylvania State University and a BS in Education from Millersville University. He served as an officer in the United States Marine Corps and was globally deployed.

For a customized training at your facility contact Pandora Mazzo at *pmazzo@racc.edu or call 610.372.4721 Ext. 5312*

Business Communication & Time Management

Time: 7 Hours
Price: $595

Build the skills today's workplace demands. Learn to communicate clearly—verbally and in writing—while mastering practical tools for managing time, priorities, and daily tasks. Gain confidence, stay organized, and deliver stronger results.

You will learn to:

- Communicate with clarity and purpose
- Adapt your style to any audienceImprove verbal communication & active listening
- Manage difficult conversations professionally
- Use AI responsibly to support communication
- Organize and manage email efficiently
- Apply proven time & task management techniques
- Plan short- and long-term work with confidence

Who is this course for?
Professionals at any level who want to enhance communication skills, improve workflow, and increase overall productivity.

For a customized training at your facility contact Pandora Mazzo at *pmazzo@racc.edu or call 610.372.4721 Ext. 5312*

Delivering Superior Customer Service

Time: 7 Hours
Price: $595

Highly functioning Customer Service teams are viewed by their customers as partners, not simply suppliers. The ability to effectively represent your company to the customer and the customer to your company is a competitive differentiator that requires skilled and aligned customer service team members. This workshop provides all customer facing personnel with skills, best practices and tools to enable them to deliver service excellence by managing customer expectations and building customer relationships.

For a customized training at your facility contact Pandora Mazzo
at *pmazzo@racc.edu or call 610.372.4721 Ext. 5312*

Wellness in the Workplace

Customized training at your facility!

The past few years have been tough on just about every industry. During the pandemic, people either became more aware of their physical and mental health, or lost sight of it. We are proud to announce that we have developed a program of wellness that we feel encompasses a body and mind approach to help create a sense of belonging within your organization. We believe this is paramount towards any company's success.
Increased energy and positivity are the goals, and they will aid your company in conquering the number one cause of low employee retention and that is stress. Show your team that you will invest in them, and they will in turn invest in you.

For a customized training at your facility contact Pandora Mazzo
at *pmazzo@racc.edu or call 610.372.4721 Ext. 5312*

Train the Trainer

Time: 7 Hours
Price: $595

Being a subject matter expert does not necessarily imply the capability to train others. The ability to effectively "train others to train" is a force multiplier for any business and requires the knowledge and skills to both develop and deliver effective and meaningful instruction. This workshop provides subject matter experts with the tools, skills and best practices to develop other trainers in an adult learning environment and expand their organization's training capacity.

For a customized training at your facility contact Pandora Mazzo at *pmazzo@racc.edu or call 610.372.4721 Ext. 5312*

One-on-One Performance Coaching

Customized training at your facility

Performance coaching can help identify an employee's growth, as well as help plan and develop new skills. Our Certified Coaches meet one on one with employees for:

- Behavior Change Wellness & Stress Management
- Leadership Development
- Succession planning
- Performance Improvement Plans (PIPs)
- Culture Development and much more

"My experience with Laural Miller was professional and collaborative. Executive Wellness Coaching focused on my personal growth, which was necessary before focusing on professional goals. We worked together to set goals and develop the steps needed to reach them."

Kelly, GK - Elite Sportswear

For more information contact Pandora Mazzo at pmazzo@racc.edu or call 610.372.4721 Ext. 5312

MANAGEMENT MASTERCLASS

MANAGEMENT MASTERCLASS
Time: 24 Hours, Price: $1,595
(six, 4-hour sessions)
8AM - 12PM
Location: Schmidt Training & Technology Center

WHO SHOULD TAKE THIS COURSE:

This course is specifically designed for new, current, and upcoming Managers, Directors, and Executives.

PROGRAM HIGHLIGHTS:

Leadership

- Identifying & Managing Behavior Styles
- Communicating Consistently & Effectively
- Building & Leading Engaged Teams
- Resolving Individual and Team Conflict

Organizational Strategy

- Harnessing Performance Management for Team Success
- Achieving Results Through Leadership
- Managing Talent Development
- Navigating Obstacles to Individual & Team Success

Financial

- Monthly financial analysis of operations processes & procedures
- Cost analysis and cost management procedures
- Forecasting and Pro Forma Projection processes
- Operations Budget Development procedures
- Capital Expenditure and Business Invest ment analysis and proposal procedures

85% of new managers receive no formal training and are promoted into management positions because they were good in their individual contributor roles.

Meet our Instructors:

Lawrence Franz is a seasoned executive advisor and entrepreneur with over 30 years of experience in corporate operations, financial strategy, and business transformation. He has successfully founded, scaled, and exited multiple ventures, and currently leads an asset liquidation firm with over 1,000 auctions completed. As a trusted advisor with Mid-Atlantic Business Advisory Services, he consults on business valuations, due diligence, risk management, and financial forensics for companies navigating complex transitions.
A dynamic presenter and former adjunct faculty at top institutions, Lawrence Franz blends real-world insight with academic rigor. He holds an MBA in Finance and Management (Summa Cum Laude), a B.S. in Physical Therapy (Magna Cum Laude), and professional licenses in both healthcare and auctioneering.

Jack Tongue is a learning & development leader with over 30 years' experience in the creation, development and delivery of training solutions. Jack's primary areas of
focus are leadership, sales and operations. He has facilitated leadership, sales, customer service, coaching, presentation, business writing, communication, and performance management programs.
Jack holds a Masters Degree in Instructional Systems Design from The Pennsylvania State University and a BS in Education from Millersville University. He served as an officer in the United States Marine Corps and was globally deployed.

For more information contact Pandora Mazzo at *pmazzo@racc.edu or call 610.372.4721 Ext. 5312*

Lean Six Sigma Boot Camp

White Belt, 32 Hours - $1,995
Yellow Belt, 40 Hours - $3,225
Green Belt, 80 Hours - $4,345
Black Belt, 120 Hours - $5,995
Customized training at your facility

Our Lean Six Sigma Boot Camp solves real problems in real time—right at your facility. This program includes up to 120 hours of experienced, in-person, and interactive training.

Change and continuous improvement are ongoing processes. They start with equipping your team with the skills, tools, and techniques needed to lead projects and actively contribute to meaningful improvement efforts.

Our Lean Six Sigma Belt classes provide the knowledge and hands-on experience required to become an effective leader in Lean and continuous improvement. Choose a full Belt Boot Camp certification or customize your training by selecting from any of our fifteen breakout sessions.

Belts	Workshops
	Introduction to Lean Principles, Strategies & Techniques (8 Wastes)
	Kaizen Events (Plan, Conduct & Follow-up)
	6S Workplace Organization Kaizen
	Lean Daily Management (SQDC)
	Root Cause & Corrective Action (8D)
	Six Sigma - DMAIC (Define–Measure–Analyze–Improve–Control)
	Kanban Pull Systems (PFEP)
	Continuous Flow (Cellular Layouts)
	Quick Changeover (SMED)
	Total Preventive Maintenance (TPM)
	Lean Leader / Facilitator / Coach (LFC)
	The Eight Steps of Value Stream Management (VSM)
	Six Sigma – Statistical Process Control (SPC)
	Creating a Continuous Improvement Culture (Kata)
	Policy Deployment / Hoshin

For more information contact Pandora Mazzo at
pmazzo@racc.edu or call 610.372.4721 Ext. 5312

Coming in February 2026!

LEAN SIX SIGMA *BLACK BELT* BOOT CAMP

Black Belt, 120 Hours - $5,995
Hosted by: Brentwood's Industrial 621 Site, Reading, PA
Time: 8am - 4pm | *Lunch Provided*

15 Weeks - Wednesdays
February 4, 11, 18, 25 | March 4, 11, 18, 25
April 1, 8, 15, 22, 29 | May 6, 13

*** Contact Pandora Mazzo for Breakout Session Pricing.*

Dan Roth is President of Go-Lean-Six Consulting LLC, a Lean Six Sigma consulting and training firm. Dan started as a Go-Lean-Six Consultant and progressed to a Lean-Six Black Belt, Director of Operational Excellence, Lean-Six Master Blackbelt and now the President / CEO of Go-Lean-Six Consulting. Dan brings over 22 years' experience in leadership, teaching, training, coaching, and mentoring in manufacturing.

Bill Law - Bill started his career in the Automotive sector and turned to the Lean Six ideology while in this field. Bill has extensive experience in both training and applying the tools in a variety of industries and environments across all levels of an organization. These industries include glass manufacturing, contract liquid manufacturing, metal fabrication, assembly, coating, packaging, healthcare, gas & electricity, service parts manufacturing, and logistics.

"The class provides an abundance of techniques that can be used in my workplace for further improvement to the workflow. Dan Roth is well-versed in the teachings and made it an engaging experience through examples in my workplace."

Xavier Zavala
Manufacturing Engineer, Brentwood Industries

For more information contact Pandora Mazzo at
pmazzo@racc.edu or call 610.372.4721 Ext. 5312

CHOOSE A CAREER THAT MAKES A POSITIVE ENVIRONMENTAL IMPACT

WASTEWATER TREATMENT PLANT OPERATOR CERTIFICATION PROGRAM

WHAT'S YOUR GOAL?

If your goal is a career in a field that makes a *POSITIVE ENVIRONMENTAL IMPACT,* is stable, and has growth potential, then RACC's Wastewater Treatment Plant Operator Program will get you on the right path.

WE HELP YOU GET THERE WITH . . .

- Instructors who are certified operators and/or subject matter experts
- Class size of 30 students or fewer
- Engaging classroom experiences
- Field trips to better understand treatment processes discussed in class

PROGRAM DESCRIPTION

Reading Area Community College offers a 180-hour certification program designed to prepare new operators for licensing in the high-demand field of wastewater treatment plant operators. The curriculum for the program was developed by the Pennsylvania Department of Environmental Protection (DEP). This program will prepare students for the DEP's operator certification exams. Combining this program with work at a local treatment facility will prepare students for licensing.

WHAT YOU WILL LEARN

The Wastewater Treatment Operator program combines course work, on-site visits to facilities with classroom components, interactive class discussion with current certified operators, out-of-class assignments, and module-end exams. The program utilizes DEP-approved curriculum that is taught by certified operators and other qualified instructors. The course components also offer continuing education units (contact hours) necessary for certified operators to maintain their certifications.

ADMISSION REQUIREMENTS

- Graduate of an approved secondary school or hold a high school equivalency diploma (GED)
- Commitment to attendance policies and program requirements

CLASS INFO

Tues. & Thu. 6 PM – 9 PM
August, 2026 - 90 Hour Fall Program, $1,495
January, 2027 - 90 Hour Spring Program, $1,495

WANT TO LEARN MORE?

Contact David Lerch at dlerch@racc.edu or call 610-372-4721 ext. 6208

Ten South Second Street, Reading, PA 19602 | 610.607.6224 | 800.626.1665 | www.racc.edu

FUNDAMENTALS OF PROJECT MANAGEMENT

Instructor Daral Woerle
$825
Time: 16-hour course (two, 8-hour sessions)
March 30 and April 6, 8:00 AM to 4:00 PM

The Project Management course offers a fundamental look into the key best practices of project management. We deliver the course over four sessions with in-class and out-of-class activities. Participants learn how to plan a project, then lead the project to a successful delivery. Whether you are new to project management or have some experience, everyone will leave with new insights, tools, and techniques to implement immediately.

Who this course is for:
This 16-hour course is designed for managers and supervisors involved in engineering, research and development, data processing, manufacturing, corporate planning, finance and marketing.

Meet Our Instructor:

Daral A. Woerle, Esquire, PMP was born and raised in Berks County. He served on active duty in the United States Army for eight years before obtaining a law degree. He has been providing leadership and consulting services for over 35 years. Currently, Daral serves as the president of PinnaclePM, LLC, a management consulting company focusing on providing project management, process improvement, and training services.

Daral has earned both the Project Management Institute's (PMI) Project Management Professional (PMP) and Prince2 Practitioner certifications and is a designated PMP prep course instructor. He has taught Project Management courses to thousands of students including
Fortune 100 Companies like Facebook, Subaru, and the United Nations.

For more information contact Pandora Mazzo at
pmazzo@racc.edu or call 610.372.4721 Ext. 5312

Reading Area Community College
Community Education
10 South Second Street
P.O. Box 1706
Reading, PA 19603-1706

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WHAT MAKES US DIFFERENT?

WE ARE A BUSINESS-TO-BUSINESS TRAINING SOLUTIONS PROVIDER

- The Schmidt Training and Technology Center (STTC) has been providing training for Industry Employers since its opening in 2006. ***Industry knows and trusts us!***
- Our ***scheduling is designed for flexibility*** allowing employees to balance work, school, and life.
- All ***instructors are experts in their fields*** and come from industry.
- STTC instructors and staff are focused on ***your employees!***
- Training may be eligible for ***WEDnet (pg. 24) or incumbent worker funding***.
- ***You determine employees training needs:*** from an individual skill to a customized training program.