NOW Registering!
Winter/Spring 2019

Business Courses • Computers • HEP
Healthcare Programs • IT Certifications • Workforce
Online Courses & Certificates • Technical Training

Ten South Second Street, Reading, PA  |  610.607.6232  |  1.800.626.1665  |  racc.edu  |  Sponsored by the County of Berks
Please visit our Welcome Center in the Berks Hall lobby.

Discover a new career path!
Meet our friendly staff!
Learn about our credit and certificate programs!

Monday, Thursday, Friday: 8:00 AM - 5:00 PM
Tuesday, Wednesday: 8:00 AM - 7:30 PM

Call 610.607.6224 or visit racc.edu

WARRANTY DISCLAIMER

The College and its affiliates hereby disclaim all warranties, whether express, implied or statutory, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose employability, future employment, licensure, certification or availability of courses, program, instructors or curriculum.

For more information on our graduation rates, the median debt of students who have completed programs and other important information, please visit our website at racc.edu/HEOA.
Healthcare Programs

CAREER TRAINING

DENTAL ASSISTANT*
624.5 Hrs. $6,125
Start date: October 2018
This full-time program will prepare individuals for employment in a dental office. Students will receive theory and practical applications regarding chair-side assisting. Students will also learn basic laboratory procedures and prepare to take the state certification exam in radiology. In addition to classroom instruction, there is a 200-hour internship in a dental office. For gainful employment visit https://goo.gl/1eNjE3

PHLEBOTOMY WITH EKG TRAINING*
444.5 Hrs. $6,050
Classes begin every 6 weeks
This program prepares individuals to collect blood from adult patients and perform EKGs. The initial component of training will consist of basic medical courses and a word processing course. The second part of this training consists of a full-time (day) clinical internship. For gainful employment visit https://goo.gl/TUJVca

CNA, NURSE AIDE*
118 Hrs. $1,390
Classes begin every 6 weeks
This program prepares students for employment in a long-term care facility. During this course, the student will be presented with both theory and practical information regarding patient care. This course meets the requirements of the state of Pennsylvania. Students completing the course will be eligible to take the Pennsylvania State Competency Exam.

MEDICAL/DENTAL INSURANCE & BILLING SPECIALIST
639 Hrs. $7,010
Classes begin every 6 weeks
This program focuses on developing the administrative skills necessary to be a successful Medical Insurance and Billing Specialist. This fast growing field offers employment opportunities in doctors’ offices, dental offices, insurance companies, hospitals, and home-based businesses. Three years of business or administrative experience is required for this course of study. Students complete a 150-hour internship. For gainful employment visit https://goo.gl/4hkRNV

MEDICAL RECEPTIONIST
654 Hrs. $7,210
Classes begin every 6 weeks
This program prepares individuals for employment as a receptionist in a medical office or other healthcare setting. Students will learn keyboarding skills and medical office procedures including: answering the telephone, scheduling patients, maintaining files, and directing visitors. Instruction will also prepare individuals for related clerical duties using medical terminology in hospitals, clinics or lab facilities. Students complete a 150-hour internship. For gainful employment visit https://goo.gl/tQuxDq

MEDICAL ASSISTING*
675 Hrs. $7,715
Classes begin every 6 weeks
This program prepares students to function in a variety of entry-level capacities in hospitals, clinics, and doctors’ offices. Students will develop skills in medical terminology, computerized medical office procedures and other front office duties. In addition, students will learn back office skills, including administering injections and immunizations, dispensing medications, drawing blood, and performing EKGs and CPR. Students complete a 150-hour internship. At the conclusion of this program, students will sit for CCMA certification (included). For gainful employment visit https://goo.gl/4hkRNV

* Proof of personal medical insurance and a criminal background check are required.
Please call 610.375.8188 for additional information on these programs.
Healthcare Programs

**MEDICAL SECRETARY**
657 Hrs. $7,300
Classes begin every 6 weeks
This program is designed to help students with basic clerical skills advance their skill set to work as a Medical Secretary. Completing this course will prepare the student for administrative duties such as transcription, patient scheduling and insurance and billing. Students complete a 150-hour internship.

*For gainful employment visit [https://goo.gl/QaxzwQ](https://goo.gl/QaxzwQ)*

**VETERINARY ASSISTANT***
160 Hrs. $1,700
Start date: September 2018
This program will provide the student with the basic, entry-level knowledge and skills necessary for pursuing a career in a veterinary hospital as an assistant. This training is technically challenging. The program includes classroom and animal restraint competencies that must be successfully demonstrated prior to clinical placement for hands-on experience in local veterinary hospitals. Mastering medical terminology and basic technical veterinary skills are an integral part of the training.

Please call 610.375.8188 for additional information on these programs.

“I chose RACC because it offered a six-month career program that was close to home. Six months is a short amount of time to dedicate to bettering yourself and your career. While I was at RACC, I learned how to be a successful student. The staff at RACC helped me achieve my goals by setting high standards, answering all questions and working with me. My experience at RACC was pleasant and I would definitely do it all again.”

~Michelle Drumheller, Medical Office Supervisor

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**Are you a Medical Assistant wishing to be certified?**

*Are you interested in preparing for and taking your CCMA certification exam?*

**Cost:** $695 (includes a test prep guide, practice tests and a one-time NHA Test)

If you have been a practicing clinical medical assistant for one year and/or have previously taken RACC’s Medical Assisting Program, you are ready for the NHA certification test prep course. This 21-hour classroom session will cover information in preparation for the NHA exam. Benefits in obtaining a Clinical Medical Assistant Certification may include: more job opportunities, increased pay scale, job security, and increased subject matter expertise.

The class will include a NHA test prep book and cover information on the following:

- Patient Care
- Communications
- Medical Law and Ethics
- Office Administration
- Medication Administration
- Electrocardiography
- Phlebotomy and Specimen Handling
- Infection Control
- Medical Terminology

*Classes are held one evening each week.*

*Must possess a high school diploma or GED.*

Reading Area Community College is now an NHA testing site for Medical Assistants!

Please call 610.375.8188 to schedule your course today!
## Healthcare Programs

### BLS PROVIDER

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### BLS RECERTIFICATION

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The course includes adult, child and infant rescue skills in both the out-of-hospital and in-hospital settings. *Includes pocket mask.

(More dates listed on web)

### BLS AND HEARTSAVER INSTRUCTOR COURSE

An American Heart Association approved course designed to enable candidate to teach. The candidate will be able to teach a BLS course using the video and lesson maps that are part of the American Heart Association curriculum. **Must have a current BLS HCP card.**

Please call Lisa Mauger-Kulp at 610.607.6220, or email lmaugerkulp@racc.edu for information on scheduling an instructor course.

In order to view our current schedule go to racc.edu. View courses & catalogs, Health Care Program catalogs, BLS Provider.

To register online follow instructions on page 48 and select topic code CPR. Please call 610.607.6220 for additional information on these programs.
Reading Area Community College is pleased to announce a series of classes for healthcare professionals who are interested in learning more about the insurance and billing side of the practice. Each class will run twice a week for a period of six weeks. Classes include:

**Classes begin every six weeks!**

### MEDICAL INSURANCE AND CODING CLASSES

#### MEDICAL INSURANCE AND CODING 1*

**ZINS-601**  
**$345**  
**3:10–5:10 PM**  
**TTh**

This class introduces students to the coding that is used in submitting claims to the various insurance carriers. Students will become familiar with ICD-10 codes, CPT codes and HCPC codes. Students will be using various coding books to become familiar with looking up codes and the format of each book. Students will also review the data fields that are used to submit 1500 forms and discuss common errors on claim forms which may lead to denials from insurance carriers.

#### MEDICAL INSURANCE AND CODING 2*

**ZINS-606**  
**$400**  
**5:10–7:40 PM**  
**TTh**

This class discusses specifics of the various health insurance plans and programs offered in the United States today. Topics include Blue Cross, Blue Shield, commercial insurance plans, Medicare, Medicaid, Tri-care, Workers’ Compensation, and Disability. The class will also review the cash flow cycle, common reasons why claims do not get paid, the A/R function, the importance of patient education and the collection process.

#### INTRO TO INSURANCE*

**ZINS-600**  
**$345**  
**1:00–3:00 PM**  
**MW**

This class introduces students to the basic insurance concepts and types of insurance plans offered in the United States today. This information is especially useful for people who purchase insurance through the Patient Protection and Affordable Care Act ("Obamacare") and for healthcare personnel who may have to address questions from patients about their insurance plans. The class will discuss Major Medical (Fee for Service) plans, Preferred Provider Organization (PPO) plans, Point of Service (POS) plans, Health Maintenance Organization (HMO) plans, High Deductible Health Plans (HDHP) as well as Health Saving Accounts, Health Reimbursement Accounts, Flexible Spending Accounts, and Dependent Care Accounts. Other topics including Medicare and Medicaid plans and coordination of benefits will be discussed.

#### MEDISOFT

**ZINS-604**  
**$345**  
**5:10–7:10 PM**  
**MW**

This class offers students a database practice simulation of the steps needed to register patients with demographics, adding insurance plans, entering data (codes and charges) from visits and for services, posting co-pays from patients, submission of claims to insurance carriers, posting payments from EOBs/RAs, mailing of patient statements and posting patient payments after patient statements have been sent out. Topics will include insurance coordination of benefits, effective and termination dates of plans, patients that have multiple insurance cases (employer group plan, MVA, WC).

#### DENTAL INSURANCE AND CODING

**ZINS-605**  
**$345**  
**8:00 AM–12:00 PM**  
**F**

This class discusses specifics of dental plans along with their provisions and limitations. Students will access the internet to learn about current dental procedures and dental plans. Discussion will involve the specialty practices of modern dentistry, plan design and payment methods, and insurance rules and regulations. Students will learn the differences between billing dental and/or medical plans for services and review completion of forms and coordination of benefits. Mathematical calculations will be explained as they apply to orthodontia as well as the use of an FSA to supplement dental coverage.

*Book available in RACC Bookstore.  
Please call 610.375.8188 for additional information on this program.
ONLINE TRAINING

Reading Area Community College is pleased to provide online CPR training.
1. BLS Provider
2. Heartsaver CPR/AED
3. Heartsaver CPR/AED First Aid
4. Heartsaver First Aid
5. ACLS
6. PALS

Follow these simple steps to a successful course completion:
1. Sign on to http://www.onlineAHA.org
2. Choose your course (fee varies by course)
3. Complete the online portion and print your certificate
4. Schedule a skills test

A skills session is the hands-on portion of an AHA online course. It is conducted in person after the student completes the online course. To schedule a skills session contact Lisa Mauger-Kulp at 610.607.6220 or email lmaugerkulp@racc.edu

Payment of $50 must be paid prior to taking the skills test.

By Phone: Call 610.607.6235 or 610.607.6231 to register with VISA, MasterCard or Discover.

In Person: RACC, Berks Hall Room 107, 10 South Second Street,
Monday and Thursday 8:00 AM - 4:30 PM;
Tuesday and Wednesday 8:00 AM - 6:30 PM;
Friday 8:00 AM - 4:00 PM

Class Location: Reading Area Community College (RACC)

Please call 610.607.6220 for additional information on these programs.
CAREER TRAINING

ADMINISTRATIVE ASSISTANT  $6,520*
656 Hrs. (6 months) Classes begin every 6 weeks
This program prepares those possessing three to five years of business or clerical experience to upgrade to the administrative assistant level. Upon completion, the student will be prepared to work as an office manager, administrative assistant or executive secretary. Students complete a 200-hour internship.
For gainful employment visit https://goo.gl/qZacQs

COMPUTER APPLICATIONS  $3,330
231 Hrs. (3 months) Classes begin every 6 weeks
This program will assist those students who need to gain valuable computer software training. Included in this course are classes in word processing, spreadsheets, and an introduction to computers. Students will also become proficient in Desktop Publishing, Access and PowerPoint.

Train for a new career in 6 months!

*Funding may be available through financial aid and/or scholarships.

*NOTE: A criminal background check is required for all courses with internships.
Please call 610.375.8188 for additional information on these programs.

OFFICE ASSISTANT WITH COMPUTER APPLICATIONS  $5,830*
558 Hrs. (6 months) Classes begin every 6 weeks
This program is designed to build basic clerical skills with an emphasis on developing computer application skills. Students will be prepared to enter the business world as clerical support personnel, receptionists, correspondence clerks and data entry clerks.
Students complete a 150-hour internship.
For gainful employment visit https://goo.gl/iUw2NV

BECOME A CERTIFIED AUCTIONEER!

At the completion of the auctioneering course, the student will be able to take the Pennsylvania State Auctioneer’s License Exam and, upon passing of this exam, become a Pennsylvania Licensed Auctioneer.

The content of this course is designed to provide students with knowledge of the techniques, procedures, and principles of communication and marketing, appraisal, management and law necessary to conduct a successful auction. The course also includes practical field experience of on-the-job training with Pennsylvania-licensed auctioneers.

The Auctioneering Program meets all educational course requirements necessary to sit for the PA State Auctioneer’s License Exam.

• Scholarships available
• Approved for Veterans and OVR Benefits

Spring 2019
Cost: $3,800

Please call 610.375.8188 for more information.
Classes begin every six weeks!

INTRODUCTION TO PERSONAL COMPUTERS
ZCOM-600 $90
10:00 AM-4:30 PM  F
If you are a new computer user, this course is for you. Course content includes computer start-up, running programs, menus, basic computer concepts, file management and information about storage media.

MS WORD 2010 - Level 1*
ZCOM-601 $345
10:10 AM-12:10 PM  TTh
Learn to use one of the most sophisticated and widely used word processing programs available! During this introductory course, you will explore the Word 2010 environment, create, save, edit, and proofread documents, change the look of text, change the look of the document, and get help in Office 2010. Prerequisite: Familiarity with working in the Windows environment and working with a keyboard and mouse. Please bring a memory stick or flash drive to class.

MS EXCEL 2010 - Level 1*
ZCOM-603 $345
1:00-3:00 PM  TTh
Start with an introduction to Excel 2010. Learn techniques for entering data into cells, working with data, and using data tables more efficiently. Discover how to finish your workbook and how to navigate and get help in Excel 2010. The class will also cover basic techniques for filtering and limiting data that can be entered into individual cells. Previous Windows experience recommended. Please bring a memory stick or flash drive to class.

MS EXCEL 2010 - Level 2*
ZCOM-604 $345
1:00-3:00 PM  MW
Build your Excel skills with intermediate techniques for sorting and summarizing data. Learn to create dynamic charts and graphs. Practice utilizing formulas and functions and develop your ability to collaborate with colleagues using passwords, comments, and change-tracking. Prerequisite: Excel 2010 Level 1 or equivalent experience. Please bring a memory stick or flash drive to class.

OVERVIEW OF OUTLOOK 2010
ZCOM-605 $45
1:00-4:00 PM  F
In this overview of the vast Outlook software, you will learn to navigate and learn the tools for email, calendar, contacts, and tasks. This class will focus on what Outlook has to offer--not the basic skills of email. Learn how to sort your inbox and organize it with folders. Create rules to help you better manage your email and Quick Steps to make those common tasks go "quicker." Learn the different types of appointments in the calendar.

INTERNET WORKSHOP
ZCOM-608 $90
10:00 AM-4:30 PM  F
This six-hour course introduces students to internet browser features, locating internet sources and using email features.

KEYBOARDING I*
ZCOM-606 $345
3:10-5:10 PM  TTh
This course is designed to teach students keyboarding skills for those with no prior keyboarding background or for students who wish to improve previously learned skills. This course emphasizes touch control of the keyboard and proper keyboarding techniques. Students will be keyboarding 25-45 words per minute with five or less errors as demonstrated by a five-minute timed test.

*Book available in RACC Bookstore.
Please call 610.375.8188 for additional information on this program.

To register online follow instructions on page 48 and select topic code Computers
QUICKBOOKS ONLINE TRAINING & ACCOUNTING CONCEPTS FOR THE SMALL BUSINESS OWNER  
ZCAR 343-3119  
Cost: $189.00 Includes printed Textbook, eBook & eLab license & Trial Software  
Sessions: 6 classes, 2-hours per class, Wednesday evenings 6pm-8pm and Saturday mornings 10am-12noon for 3 weeks – May 1 & 4, May 8 & 11, May 15 & 18

In this hands-on classroom format, students will learn the step-by-step processes to manage the bookkeeping and accounting functions for small businesses using QuickBooks Online. QuickBooks Online is the most popular US cloud-based accounting application for small to mid-sized businesses as it enhances collaboration with accounting professionals and remote workers, provides access from any internet mobile device and integrates with a myriad of cloud-based applications that help business owners manage processes such as customer relationship management (CRM), inventory tracking, e-commerce, construction management and point of sales systems.

This course will weave accounting concepts through each training segment in order to help students understand the accounting processes QuickBooks Online performs behind the scenes when entering common transactions. In addition, students will have real-world exercises to reinforce accounting concepts and QuickBooks Online skills. Best practices for using QuickBooks Online and an emphasis on the underlying accounting principles will help the student build confidence and a greater understanding of the importance of good financial recordkeeping to effective business decision-making.

Unique to this training program, students will also have the opportunity to use a live company file to learn how to process payroll within QuickBooks Online. Students must provide their own laptop computer.

TRADITIONAL & ONLINE MARKETING AND SALES TIPS & TECHNIQUES FOR TODAY'S BUSINESS  
ZCAR 342-3119  
Cost: $50.00  
Sessions: 2-hours per class, Thursday evenings 6pm-8pm for 3 weeks – May 9, 16 & 23

Today's businesses are challenged with what the best chose for marketing their business and closing the sale. In this three-week session, we will discuss how to decide when to use traditional marketing, online marketing, and how to close the sales. Week 1 will be focused on traditional marketing and how to combine it with online marketing. We'll also introduce online marketing during the first week. The second week will be devoted to online marketing and how to combine it with online marketing. With the knowledge you have from the first two weeks, you're now ready to close the sale. The third week will be devoted to exactly that, closing the sale. You will be provided with a digital handbook available throughout the three weeks and beyond. The class will be trained by SCORE Workshop Trainers & Subject Matter Experts.

Remember to register early!  
Classes begin as indicated in agenda sections. See page 9 for instructions on how to register.
NON-PROFIT MANAGEMENT AND LEADERSHIP SERIES
ZCAR 341-3119
Cost: $50.00
Sessions: 2-hours per class, Tuesday evenings 6pm-8pm for 3 weeks – April 2, 9 & 16

Today, what non-profit organizations do is vast, diverse, and invaluable to American life. Non-profits are the primary drivers of social change and the providers of a wide array of goods and services to a diverse group of individuals. However, if non-profit organizations are to effectively serve their client base, maintain their impact, and support ongoing relevance, they must demonstrate leadership in all aspects of their offerings. This course has been developed as a series of workshops covering several subjects pertinent to the common operations and management of non-profit organizations. The subject matter will include modules in such areas as communications, finance, governance, marketing, strategic planning, alliance building, social media and technology integration. The series will be moderated by a combination of SCORE counselors and subject matter experts (SME’s).

STRATEGIES TO RECHARGE YOUR BUSINESS
ZCAR 340-3119
Cost: $70.00
Sessions: 1 ½ hours per class, Monday evenings 6:00pm-7:30pm for 5 weeks – April 1, 8, 15, 22 & 29

Targeted for those small businesses who have progressed beyond the startup phase and have 3-5 years’ experience under their belts. This series of 5 seminars will focus on those area of most concern for sustainability of your business for the next 3 to 5 years and beyond. Each session will be a self-contained unit and instructed by a subject matter expert. Topics will include: Telling Your Story and Communications, Sustainability Through Strategic Planning, Market Research for Strengthening Your Niche, Team Building & Engagement and Exploring Financing Options.

ALL NEW WORKSHOPS designed to meet the needs of local business.

Remember to register early! Classes begin as indicated in agenda sections.

HOW TO REGISTER
By Mail: Visit www.racc.edu/Register.pdf and print out the Workforce and Economic Development/Community Education Registration Form. Mail to: Cashier’s Office, Reading Area Community College, P.O. Box 1706, Reading, PA 19603
By Phone: Call (610) 607-6235 or (610) 607-6231 to register with VISA, MasterCard or Discover.
In Person: At Berks Hall, Room 107, RACC, 10 South 2nd Street, Reading, PA. Monday and Thursday 8:00 am – 4:30 pm; Tuesday and Wednesday 8:00 am – 6:30 pm; Friday 8:00 am – 4:00 pm. VISA, MasterCard or Discover registration accepted.

To register online follow instructions on page 48 and select topic code Business

FOR SPECIFIC INFORMATION ON THE INDIVIDUAL COURSES – Call SCORE at 610.376.3497
Students

Certificate and Degree Programs ................................................................. Page 12
Launch your career
- Machine Tool Technology
- Industrial Maintenance Technician, Mechatronics AAS
- Certified Production Technician (MSSC CPT)  

Individual Courses .......................................................................................... Page 21
Upgrade your current skills
- Mechanical, Electrical, PLC, Robotics Labs

Employers

Certificate and Individual Courses ............................................................... Page 12
Upgrade your Workforce - Flexible, affordable training
- Pre-assessment Service - Technical Theory and Skills  
- Certified Production Technician (MSSC CPT)  
- Machine Tool Technology
- Mechanical, Electrical, PLC, Robotics Labs
- CISCO Security, Industrial CCNA/IoT

Operational Excellence ..................................................................................... Page 32
Improve Productivity
- Lean, Supervisor, Engagement, Safety Training

Specialty Training

Launch your career .......................................................................................... Page 37
- Information Technology, A+, CISCO Networking Academy®, Security, Industrial CCNA/IoT
- Wastewater Treatment Plant Operator
- Electric Utility Technology (EUT)
- Ed2go On-line
Why RACC? ...Why Now?

Reasons students choose RACC

- Competency based, self-paced learning
- Credentialed, experienced, enthusiastic instructors
- +95% hiring rate; high demand technical occupations at family sustaining wage rates
- Career growth opportunities in: engineering, sales, R&D, production, supervisory/management
- Individualized career coaching, advising, and job placement support
- Strong industry partners – local, regional, national and international companies: live where you want to
- Internships available! Work in your field before completing a degree
- Stackable credentials, Affordable tuition; High ROI

Reasons local Employers choose RACC

- Over 75 technology courses; utilizing industrial equipment
- State of the art industry standard learning systems
- Curriculum teaches troubleshooting; organized problem-solving methods
- Flexible, customized training solutions; evening and early morning Lab availability
- State of the art learning systems with industry standard components
- Task-based, competency-based curriculum; hands-on learning activities
- Credentialed, enthusiastic, experienced instructors
- WEDnetPA funding available for eligible companies

Offering very flexible class times to accommodate sponsoring company and individual participants’ schedules. Participant costs include all workbooks and lab materials/consumables.

Schmidt Training and Technology Center Labs conveniently open Monday through Friday, accommodating both day and evening students.
Machine tool technicians produce precision parts using conventional and computerized numerical control (CNC) machine tools. They set up and operate a wide variety of machine tools, including drill presses, band saws, grinders, lathes, milling machines as well as CNC milling and turning centers. Students will attain the skills required for a career in the fast-paced machining industry. **NIMS** credentials available.

* **NIMS** is the National Institute for Metalworking Skills. NIMS was formed in 1995 to develop and set standards for certifying the metalworking industry. Currently NIMS offers over 20 credentials in machining ranging from entry level skills to master level skills.

www.nims-skills.org

### STUDENTS

Machine tool students are always in demand. RACC offers both theoretical and hands-on training for machine tool technology that meets the needs of business and also fulfills the requirements for the **Machine Tool Technology Apprenticeship Program**.

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### Job Prospects

<table>
<thead>
<tr>
<th>Job Prospect</th>
<th>Timeframe</th>
<th>Credential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry Level CNC Machine Operator</td>
<td>6 months</td>
<td>Basic Skills Certificate (2 NIMS)</td>
</tr>
<tr>
<td>Operator / Entry Level Manual Machinist</td>
<td>12 months</td>
<td>Intermediate Skills Certificate (6 NIMS)</td>
</tr>
<tr>
<td>Entry Level CNC Programmer</td>
<td>18 months</td>
<td>Advanced Skills Certificate (3 NIMS)</td>
</tr>
<tr>
<td>Machinist / CNC Programmer</td>
<td>24 months</td>
<td>Machine Tool Technology AAS (2 NIMS)</td>
</tr>
</tbody>
</table>

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RACC's Machine Tool Technology training program is self-paced, allowing the student to complete the necessary theory 24 hours a day 7 days a week through RACC's online training site. All hands-on skills are completed at the Schmidt Training and Technology Center under the guidance of certified instructors.

Schmidt Training and Technology Center Labs conveniently open Monday through Friday, accommodating both day and evening students.

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Basic Skills Certificate

**BASIC CNC OPERATION**

(Z)MTT-100  
$3,295 (LAP books included)
- **150 hours**

**BASIC CNC LATHE OPERATION**

(Z)MTT-101  
$565  
- Teaches basic set up and operation of CNC lathes. Preparation NIMS Level I certificate: CNC Lathe Operation. Co-requisite: (Z)MTT-100  
- **30 hours**

Intermediate Skills Certificate *(Basic Skills Certificate plus)*

**INTRODUCTION TO MACHINING**

(Z)MTT-105  
$1,695 (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  
$1,695 (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**

**TURNING TECHNOLOGY LEVEL I**

(Z)MTT - 157  
$1,695 (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  
$1,695 (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: Milling.  
- **75 hours**

Flexible start times available

These courses have an open start date.  
Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.
CNC PROGRAMMING
(Z)MTT-180 $1,695 (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

BLUEPRINT READING
(Z)MTT-132 $1,695 (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 MILL LEVEL I
(Z)MTT-185 $1,795 (textbook additional)
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. 75 hours

CAM PROGRAMMING
(Z)MTT-288 $1,695 (textbook additional)
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

ENGINEERING GRAPHICS WITH SOLIDWORKS
(Z)MTT-107 $1,195 (textbook additional)
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 and SimulationXpress. Students will learn the foundation skills of Solidworks. 45 hours

Flexible start times available

These courses have an open start date.
Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.
Machine Tool Technology AAS (Advanced Skills Certificate plus)

**MILLING TECHNOLOGY LEVEL II**  
*(Z)MTT-212*  
$1,695 (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.  
75 hours

**CNC MILLING II**  
*(Z)MTT-272*  
$1,695 (textbook additional)  
Designed by FANUC to teach FANUC MACRO Programming. Preparation for NIMS CNC Milling Level II Programming and Operation exam.  
75 hours

**GRINDING TECHNOLOGY**  
*(Z)MTT-221*  
$1,695 (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*  
$1,795 (textbook additional)  
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

**CNC FIXTURE DESIGN**  
*(Z)MTT-265*  
$1,195 (textbook additional)  
Teaches CAD software design of production ready jigs and fixtures. Design features and methods will be discussed.  
45 hours

**Plus General Education Requirements**  
*Gen Ed Courses AAS Degree ....................... 25 cr.*  
ORI 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 150 or 250 Applied Physics ....................4 cr.  
Humanities Elective ................................3 cr.

**Electives - Select One**

Flexible start times available

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

UPGRADE YOUR SKILLS - FOUR MODERN TECHNOLOGY LABS

STUDENTS & EMPLOYERS

Mechanical Lab
LAB HOURS: M-F 7:30AM - 3:30PM
M-TH 5PM - 9PM
Drives, Hydraulics, Pneumatics, Pumps, Piping, Rigging, Troubleshooting

Electrical Lab
LAB HOURS: M-F 7:30AM - 3:30PM
M-W 5PM - 9PM
AC/DC, Motors, Electronics, Sensors, Power Distribution, Troubleshooting

PLC Lab
LAB HOURS: M-F 7:30AM - 3:30PM
M-W 5PM - 9PM
Allen Bradley, Siemens, Process Control, Communication, Troubleshooting

Robotics Lab
LAB HOURS: M-F 7:30AM - 3:30PM
M-W 5PM - 9PM
Programming, Process Control, Simulation, Communication, Troubleshooting

Schmidt Training and Technology Center Labs conveniently open Monday through Friday, accommodating both day and evening students.
RACC’s Mechatronics Engineering Technology AAS Program prepares students for careers as engineering technicians in diversified manufacturing. Students gain knowledge and skills in blueprint reading, mechanics, pneumatics, hydraulics, electricity, motors, motor control, programmable logic controls, robotics and motion control, process control, instrumentation and computer integrated manufacturing.

Emphasis is placed on predictive maintenance, troubleshooting and hands-on application of mechanical, electrical and controls skills. Our technical courses are taught in a flexible format that includes theory and applied learning using industry relevant training equipment.

<table>
<thead>
<tr>
<th>Job Prospects</th>
<th>Credential</th>
<th>Timeframe</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid Internship Entry Level</td>
<td>AMIST 1* Basic Skills Certificate</td>
<td>6 months</td>
<td>AMIST 1</td>
</tr>
<tr>
<td>Maintenance Tech</td>
<td></td>
<td></td>
<td>• Industrial Mechanical</td>
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<td></td>
<td></td>
<td></td>
<td>• Industrial Electrical</td>
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<td></td>
<td></td>
<td></td>
<td>• Industrial PLC</td>
</tr>
<tr>
<td>Industrial Maintenance Tech</td>
<td>AMIST 2* Intermediate Skills Certificate</td>
<td>18 months</td>
<td>AMIST 1 plus</td>
</tr>
<tr>
<td>Level 2</td>
<td>(plus experience)</td>
<td></td>
<td>• Industrial Mechanical 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Industrial Electrical 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Industrial PLC 2</td>
</tr>
<tr>
<td>Industrial Engineering Tech</td>
<td>AMIST 3* Advanced Skills Certificate</td>
<td>24 months</td>
<td>AMIST 1 &amp; 2 plus</td>
</tr>
<tr>
<td>Level 2 &amp; AAS Degree</td>
<td>(plus experience)</td>
<td></td>
<td>• Industrial Robots &amp; Motion Control</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Advanced PLC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Process Control and Instrumentation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(plus experience)</td>
</tr>
</tbody>
</table>

*There are four levels of Advanced Manufacturing Integrated Systems Technology (AMIST) that are available as part of the Mechatronics Engineering Technology AAS. AMIST1,2,3 can be taken independently as “job ready” certificates for employment in manufacturing maintenance. AMIST 4 and General Education credits required for Degree.

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

<table>
<thead>
<tr>
<th>AMIST 1</th>
<th>AMIST 2</th>
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</thead>
<tbody>
<tr>
<td><strong>Industrial Mechanical – Hydraulics Track</strong></td>
<td><strong>Industrial Mechanical – Pneumatics Track</strong></td>
</tr>
<tr>
<td>ZTEC 356</td>
<td>ZTEC 371</td>
</tr>
<tr>
<td>Approximately 162 hours of training, 5 college credits</td>
<td>Approximately 162 hours of training, 5 college credits</td>
</tr>
<tr>
<td>Investment: $4,485</td>
<td>Investment: $4,485</td>
</tr>
<tr>
<td>Traditional or Hybrid Learning</td>
<td>Traditional or Hybrid Learning</td>
</tr>
<tr>
<td>• Hydraulics 1</td>
<td>• Pneumatics 1</td>
</tr>
<tr>
<td>• Hydraulics 2</td>
<td>• Pneumatics 2</td>
</tr>
<tr>
<td>• Pneumatics 1</td>
<td>• Pneumatics Maintenance</td>
</tr>
<tr>
<td>• Pneumatics Construction</td>
<td>• Pneumatics Troubleshooting</td>
</tr>
<tr>
<td>• Piping Systems</td>
<td>• Hydraulics 1</td>
</tr>
<tr>
<td>• Hydraulic Troubleshooting</td>
<td>• Piping Systems</td>
</tr>
<tr>
<td>• Basic Mechanical Drives</td>
<td>• Basic Mechanical Drives</td>
</tr>
<tr>
<td>• Light Duty V-Belt and Chain Drives</td>
<td>• Light Duty V-Belt and Chain Drives</td>
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<tr>
<td>• Heavy Duty V-Belt Drives</td>
<td>• Heavy Duty V-Belt Drives</td>
</tr>
<tr>
<td>• Heavy Duty Chain Drives</td>
<td>• Heavy Duty Chain Drives</td>
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<td></td>
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<tr>
<td><strong>Industrial Electrical</strong></td>
<td><strong>Industrial PLC (SLC500)</strong></td>
</tr>
<tr>
<td>ZTEC 227</td>
<td>ZTEC 428</td>
</tr>
<tr>
<td>Approximately 120 hours of training, 4 college credits</td>
<td>Approximately 80 hours of training, 2 college credits</td>
</tr>
<tr>
<td>Investment: $3,215</td>
<td>Investment: $2,025</td>
</tr>
<tr>
<td>Traditional or Hybrid Learning</td>
<td>Traditional or Hybrid Learning</td>
</tr>
<tr>
<td>• Electrical Control Circuits 1</td>
<td>• Electrical Control Circuits 1</td>
</tr>
<tr>
<td>• Electrical Control Circuits 2</td>
<td>• Electrical Motor Control 1</td>
</tr>
<tr>
<td>• Electrical Motor Control 2</td>
<td>• Electro-Fluid Power 1</td>
</tr>
<tr>
<td>• Electro-Fluid Power 1</td>
<td>• Electronic Sensors</td>
</tr>
<tr>
<td>• Residential/Commercial Wiring</td>
<td>• Residential/Commercial Wiring</td>
</tr>
<tr>
<td>• Industrial Electrical Wiring</td>
<td>• Industrial Electrical Wiring</td>
</tr>
<tr>
<td>• Industrial Power Distribution</td>
<td>• Industrial Power Distribution</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Industrial PLC (SLC500)</strong></td>
<td><strong>Industrial PLC (SLC500) 2</strong></td>
</tr>
<tr>
<td>ZTEC 433</td>
<td>ZTEC 433</td>
</tr>
<tr>
<td>Approximately 40 hours of training, 2 college credits</td>
<td>Approximately 40 hours of training, 2 college credits</td>
</tr>
<tr>
<td>Investment: $1,025</td>
<td>Investment: $1,025</td>
</tr>
<tr>
<td>Traditional Learning only</td>
<td>Traditional Learning only</td>
</tr>
<tr>
<td>• Analog Application System</td>
<td>• Analog Application System</td>
</tr>
</tbody>
</table>
Industrial Robotics and Motion Control
ZTEC 531
Approximately 140 hours of training, 4 college credits
Investment: $4,215
- Robotics & Computer Programming Systems
- Flexible Manufacturing Systems
- General Purpose Motion Control System
- Multi-Axis Motion Control System

Process Control & Industrial Instrumentation
ZTEC 437
Approximately 90 hours of training, 3 college credits
Investment: $2,555
- Process Control
- Thermal Process Control

AMIST 3
Advanced Industrial PLC - Your choice:

Advanced Industrial PLC
AB ControlLogix
ZTEC 438
Approximately 170 hours of training, 4 college credits
Investment: $3,995
- ControlLogix Controller and Troubleshooting Functions
- ControlLogix Analog Application System
- ControlLogix PanelView Plus System
- ControlLogix DeviceNet
- ControlLogix ControlNet
- ControlLogix EtherNet

OR*
Advanced Industrial PLC Siemens S7315
ZTEC 439
Approximately 140 hours of training, 4 college credits
Investment: $3,995
- Siemens Controller & Troubleshooting Functions
- Siemens Analog Application System
- Siemens Profibus System
- Siemens Operator Panel (HMI)
- Siemens Remote Input/Output
- Math and Data Move Instructions

AMIST 4
Manufacturing Fundamentals
MET 111
Approximately 30 hours of training, 1 college credit
Investment: $565
- 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

Capstone Class:
Mechatronics Application Project
ZTEC 522
Approximately 120 hours of training, 3 college credits
Investment: $3,200
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.

Plus General Education Requirements*
*Gen Ed Courses AAS Degree 31 cr.
- ORI 103 College Success Strategies 3 cr.
- MAT 160 College Algebra 3 cr.
- MET 110 Intro to Shop Machinery 3 cr.
- COM 121 or 122 English Composition 3 cr.
- PHY 150 or 250 Applied Physics 4 cr.
- IFT 110 Microcomputer Applications 3 cr.
- SOC 130 Sociology 3 cr.
- ENV 130 or 131 The Environment 3 cr.
- COM 141 Technical Writing 3 cr.
- HUM 101 Critical Thinking 3 cr.

These courses have an open start date.
Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.
These courses have an open start date.
Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.
INDIVIDUAL COURSES
UPGRADE YOUR SKILLS - MANUFACTURING / TECHNICAL BASICS

Hand Tools, Safety, Quality

MECHANICAL FABRICATION
BASIC SKILLS – ZTEC 390
Average time for course completion: 32 hours
Investment: $595
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: $275
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: $1,035
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: 48 hours
Investment: $1,199
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: $2,385
- 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

MECHANICAL AND ELECTRICAL FABRICATION – MET 090
Average time for course completion: 45 hours
Investment: $795
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
LAP 9 Electrical Systems
LAP 10 Residential Wiring System Components
LAP 11 Service Connections & Circuit Protection

AUTOCAD – ZMTT 310
(12wks) $825 (textbook additional)
For the new AutoCard user who needs comprehensive training in AutoCad, edit and publish drawings with AutoCard. No previous Cad experience necessary. Drafting, design or engineering experience a plus. Prerequisite: Working knowledge of the Windows-based operating system. 36 hours

These courses have an open start date.
Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.
INDIVIDUAL COURSES
UPGRADE YOUR SKILLS - MANUFACTURING / TECHNICAL BASICS

Plastics

PRINCIPLES OF PLASTICS – ZPLS 801
Average time for course completion: 5 hours
Investment: $75 - Online only - no skills

Introduction to Plastics
1. Plastics Making Process
2. Properties of Plastics
3. Plastics Manufacturing Processes
4. Plastics Nomenclature
5. Environmental Considerations

PLASTICS TECHNOLOGY 1 – ZPLS 802
Average time for course completion: 6 hours
Investment: $90 - Online only - no skills

Intro To Injection Molding Operations
1. Injection Molding Process
2. Molding: Material And Machine Safety
3. Molding Operations
4. Molding Problems And Solutions

Basic Injection Mold Design
1. Injection Mold Sprues And Runner Systems
2. Injection Mold Gates
3. Part Design - Shrinkage And Warpage
4. Injection Mold Vents

Advanced Injection Molding
1. Inserts In Injection Molds
2. Threads And Multiple-part Molds
3. Integral Hinges
4. System Purging

PLASTICS TECHNOLOGY 2 – ZPLS 803
Average time for course completion: 4 hours
Investment: $60 - Online only - no skills

Introduction To Blow Molding Operations
1. Blow Molding Process
2. Blow Molding Safety And Operation
3. Blow Molding Troubleshooting

Basic Blow Molding Design
1. Introduction To Blow Molds
2. Blow Mold Design
3. Blow Molding: Materials And Advanced Design

Introduction To Extrusion Operations
1. Extrusion Process
2. Extrusion Safety And Operation
3. Extrusion Troubleshooting

Certified Production Technician

Introducing Skill Boss to Gain MSSC’s CPT Plus Certification*

Teaches and Evaluates over 60 Essential Manufacturing Skills:
• Safety
• Quality
• Production Processes
• Maintenance Awareness

*Supports Manufacturing Skill Standards Council’s Certified Production Technician Plus certification. An industry-led standards-based training, assessment and certification system focused on the core skills and knowledge needed by the nation’s advanced manufacturing workforce.

Coming Soon!

These courses have an open start date.
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# Schmidt Training and Technology Center

## Individual Courses

### Upgrade Your Skills - Mechanical Lab

#### Hydraulics

**Basic Hydraulics - ZTEC 300**
- Average time for course completion: 20 hours
- Investment: $529
- 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: $609
- 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: $359
- 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: $1,115
- 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 Counterbalance Valves
- LAP 9: Troubleshooting Hydraulic Systems

#### Pneumatics

**Basic Pneumatics - ZTEC 305**
- Average time for course completion: 16 hours
- Investment: $405
- 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: $359
- 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: $359
- 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: $869
- 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: $139

#### Rigging

**Rigging Systems 1 - ZTEC 357**
- Average time for course completion: 35 hours
- Investment: $809
- 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: $359
- LAP 1: Wire Mesh Slings
- LAP 2: Synthetic Slings
- LAP 3: Equipment Movement

#### Lubrication

**Central Lubrication - ZTEC 318**
- Average time for course completion: 20 hours
- Investment: $495
- 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

These courses have an open start date. Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.
INDIVIDUAL COURSES
UPGRADE YOUR SKILLS - MECHANICAL LAB

<table>
<thead>
<tr>
<th>Courses</th>
<th>Average time for course completion</th>
<th>Investment</th>
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</thead>
<tbody>
<tr>
<td>MECHANICAL DRIVES 1 – ZTEC 311</td>
<td>35 hours</td>
<td>$869</td>
</tr>
<tr>
<td>LAP 1 Intro to Mechanical Drive Systems</td>
<td></td>
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<tr>
<td>LAP 2 Key Fasteners</td>
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<tr>
<td>LAP 3 Power Transmission Systems</td>
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<tr>
<td>LAP 4 Intro to V-Belt Drives</td>
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<td>LAP 5 Intro to Chain Drives</td>
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<td>LAP 6 Spur Gear Drives</td>
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<tr>
<td>LAP 7 Multiple Shaft Drives</td>
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<tr>
<td>MECHANICAL DRIVES 2 – ZTEC 312</td>
<td>35 hours</td>
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<tr>
<td>LAP 1 Heavy-Duty V-Belt Drives</td>
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<tr>
<td>LAP 2 V-Belt Selection and Maintenance</td>
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<tr>
<td>LAP 3 Synchronous Belt Drives</td>
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<tr>
<td>LAP 4 Lubrication Concepts</td>
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<tr>
<td>LAP 5 Precision Shaft Alignment</td>
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<tr>
<td>LAP 6 Couplings</td>
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<tr>
<td>LAP 7 Heavy-Duty Chain Drives</td>
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<tr>
<td>MECHANICAL DRIVES 3 – ZTEC 313</td>
<td>35 hours</td>
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<tr>
<td>LAP 1 Plain Bearings</td>
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<tr>
<td>LAP 2 Ball Bearings</td>
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<tr>
<td>LAP 3 Roller Bearings</td>
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<tr>
<td>LAP 4 Antifriction Bearing Selection and Maintenance</td>
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<tr>
<td>LAP 5 Gaskets and Seals</td>
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<tr>
<td>LAP 6 Advanced Gear Drives</td>
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<tr>
<td>LAP 7 Gear Drive Selection and Maintenance</td>
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<tr>
<td>MECHANICAL DRIVES 4 – ZTEC 314</td>
<td>20 hours</td>
<td>$495</td>
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<tr>
<td>LAP 1 Brakes and Clutches</td>
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<tr>
<td>LAP 2 Brake/Clutch Selection and Maintenance</td>
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<tr>
<td>LAP 3 Linear Ball Bushings</td>
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<td>LAP 4 Ball Screw Drives</td>
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<tr>
<td>FLOOR STANDING CONVEYORS – ZTEC 315</td>
<td>4 hours</td>
<td>$139</td>
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<tr>
<td>VIBRATION ANALYSIS – ZTEC 316</td>
<td>12 hours</td>
<td>$349</td>
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<tr>
<td>LAP 1 Intro to vibration analysis</td>
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<td>LAP 2 Vibration condition monitoring</td>
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<tr>
<td>LAP 3 Vibration analysis</td>
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<tr>
<td>LASER ALIGNMENT – ZTEC 317</td>
<td>8 hours</td>
<td>$239</td>
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<tr>
<td>LAP 1 Intro to laser shaft alignment</td>
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<td>LAP 2 Laser shaft alignment operation</td>
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<tr>
<td>PIPING SYSTEMS – ZTEC 310</td>
<td>35 hours</td>
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<tr>
<td>LAP 1 Metal Piping Systems</td>
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<td>LAP 2 Metal Piping Installation</td>
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<td>LAP 3 Plastic Piping Systems</td>
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<td>LAP 4 Metal Tubing Systems</td>
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<tr>
<td>LAP 5 Hoses</td>
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<td>LAP 6 Two-Way Valves</td>
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<td>LAP 7 Check Valves and Sloan Valves</td>
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<tr>
<td>CENTRIFUGAL PUMP SYSTEMS – ZTEC 319</td>
<td>20 hours</td>
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<tr>
<td>LAP 1 Centrifugal Pump Operation</td>
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<tr>
<td>LAP 2 Centrifugal Pump Characteristics</td>
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<tr>
<td>LAP 3 Centrifugal Pump Troubleshooting</td>
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<tr>
<td>LAP 4 System Characteristics</td>
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<td>LAP 5 Centrifugal Pump Performance</td>
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<tr>
<td>DIAPHRAGM PUMP – ZTEC 320</td>
<td>4 hours</td>
<td>$139</td>
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<tr>
<td>PERISTALTIC PUMP – ZTEC 321</td>
<td>4 hours</td>
<td>$139</td>
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<tr>
<td>MAGNETIC PUMP – ZTEC 322</td>
<td>4 hours</td>
<td>$139</td>
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<tr>
<td>CENTRIFUGAL PUMP /STUFFING BOX – ZTEC 323</td>
<td>4 hours</td>
<td>$139</td>
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<tr>
<td>MULTIPLE PUMP LEARNING SYSTEM – ZTEC 352</td>
<td>4 hours</td>
<td>$139</td>
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<td>GEAR PUMP – ZTEC 353</td>
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<tr>
<td>PISTON PUMP – ZTEC 354</td>
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<td>$139</td>
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<tr>
<td>TURBINE PUMP – ZTEC 372</td>
<td>4 hours</td>
<td>$139</td>
</tr>
</tbody>
</table>

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Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.
### INDIVIDUAL COURSES
#### UPGRADE YOUR SKILLS - ELECTRICAL LAB

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Code</th>
<th>Average Time</th>
<th>Investment</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AC/DC ELECTRICAL SYSTEM – ZTEC 205</strong></td>
<td></td>
<td>30 hours</td>
<td>$729</td>
<td>LAP 1  Basic Electrical Circuits&lt;br&gt;LAP 2  Electrical Measurements&lt;br&gt;LAP 3  Circuit Analysis&lt;br&gt;LAP 4  Inductance and Capacitance&lt;br&gt;LAP 5  Combination Circuits&lt;br&gt;LAP 6  Transformers</td>
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<tr>
<td><strong>ELECTRICAL RELAY CONTROL SYSTEMS – ZTEC 231</strong></td>
<td></td>
<td>15 hours</td>
<td>$359</td>
<td>LAP 1  Control Logic&lt;br&gt;LAP 2  Sequencing Control&lt;br&gt;LAP 3  Timers and Advanced Systems</td>
</tr>
<tr>
<td><strong>ELECTRIC MOTOR CONTROL – ZTEC 207</strong></td>
<td></td>
<td>50 hours</td>
<td>$1,215</td>
<td>LAP 1  Introduction to Electric Motor Control&lt;br&gt;LAP 2  Manual Motor Control and Overload Protection&lt;br&gt;LAP 3  Control Transformers Control&lt;br&gt;LAP 4  Ladder Logic&lt;br&gt;LAP 5  Control Relays and Motor Starters&lt;br&gt;LAP 6  Introduction to Troubleshooting&lt;br&gt;LAP 7  System Troubleshooting&lt;br&gt;LAP 8  Reversing Motor Control&lt;br&gt;LAP 9  Automatic Input Devices&lt;br&gt;LAP 10  Basic Timer Control: On-Delay and Off-Delay</td>
</tr>
<tr>
<td><strong>ADVANCED ELECTRIC MOTOR CONTROLS – ZTEC 208</strong></td>
<td></td>
<td>50 hours</td>
<td>$1,215</td>
<td>LAP 11  Motor Braking System&lt;br&gt;LAP 12  Reduced Voltage Starting Circuits&lt;br&gt;LAP 13  Power Generation and Distribution&lt;br&gt;LAP 14  Electronic Sensors&lt;br&gt;LAP 15  Timers and Counters&lt;br&gt;LAP 16  Variable Frequency AC Drive&lt;br&gt;LAP 17  Variable Frequency AC Drive, Speed &amp; Torque Control&lt;br&gt;LAP 18  Variable Frequency Drives Acceleration, Deceleration, &amp; Braking&lt;br&gt;LAP 19  Variable Frequency Drives Fault Diagnostics and troubleshooting&lt;br&gt;LAP 20  SCR Speed Motor Control</td>
</tr>
<tr>
<td><strong>BASIC ELECTRICAL ROTATING MACHINES – ZTEC 206</strong></td>
<td></td>
<td>32 hours</td>
<td>$825</td>
<td>LAP 1  DC Series Motors&lt;br&gt;LAP 2  DC Shunt and Compound Motors&lt;br&gt;LAP 3  Motor Speed and Torque&lt;br&gt;LAP 4  Motor Performance&lt;br&gt;LAP 5  Split-Phase AC Motors&lt;br&gt;LAP 6  Capacitor-Start AC Motors&lt;br&gt;LAP 7  Permanent-Capacitor and Two-Capacitor Motors&lt;br&gt;LAP 8  Three-Phase AC Induction Motors</td>
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<tr>
<td><strong>ROTATING ELECTRICAL MACHINES DC GENERATORS – ZTEC 250</strong></td>
<td></td>
<td>8 hours</td>
<td>$239</td>
<td>LAP 9  DC Generators&lt;br&gt;LAP 10  Wound-Rotor Motors</td>
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<tr>
<td><strong>ROTATING ELECTRICAL MACHINES – ALTERNATORS/SYNCHRONOUS MOTORS – ZTEC 251</strong></td>
<td></td>
<td>12 hours</td>
<td>$349</td>
<td>LAP 11  Alternators&lt;br&gt;LAP 12  Alternator Synchronization Methods&lt;br&gt;LAP 13  Synchronous Motors</td>
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<tr>
<td><strong>ELECTRICAL POWER DISTRIBUTION – ZTEC 210</strong></td>
<td></td>
<td>25 hours</td>
<td>$609</td>
<td>LAP 1  Introduction to Raceways&lt;br&gt;LAP 2  Basic Conduit Bending&lt;br&gt;LAP 3  Advanced Raceways&lt;br&gt;LAP 4  Conductors, Disconnects and Overcurrent Protection&lt;br&gt;LAP 5  Conduit Sizing and Wire Pulling Techniques</td>
</tr>
<tr>
<td><strong>ELECTRO-FLUID POWER SYSTEM – ZTEC 303</strong></td>
<td></td>
<td>40 hours</td>
<td>$959</td>
<td>LAP 1  Introduction to Electrical Control Systems&lt;br&gt;LAP 2  Basic Control Devices&lt;br&gt;LAP 3  Power Devices&lt;br&gt;LAP 4  Control Relays&lt;br&gt;LAP 5  Sequencing Control&lt;br&gt;LAP 6  Timer Control&lt;br&gt;LAP 7  Pressure Control Applications&lt;br&gt;LAP 8  Circuit Applications</td>
</tr>
</tbody>
</table>

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INDIVIDUAL COURSES
UPGRADE YOUR SKILLS - ELECTRICAL LAB

Electronics

POWER & CONTROL ELECTRONICS – ZTEC 252
Average time for course completion: 50 hours
Investment: $1,215
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: 25 hours
Investment: $609
LAP 1 Introduction to AC Motion Control
LAP 2 AC Vector (Spindle) Drives
LAP 3 AC Axis Drives
LAP 4 General-Purpose AC Drives
LAP 5 AC Drive Troubleshooting

DC ELECTRONIC DRIVES – ZTEC 401
Average time for course completion: 30 hours
Investment: $729
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

ELECTRONIC SENSORS – ZTEC 304
Average time for course completion: 8 hours
Investment: $239
LAP 1 Introduction to Electronic Sensors
LAP 2 Electronic Sensor Applications

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Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.
INDIVIDUAL COURSES
UPGRADE YOUR SKILLS - PLC LAB

Allen Bradley

PLC ALLEN BRADLEY SLC500 W/ TROUBLESHOOTING – ZTEC 402
Average time for course completion: 80 hours
Investment: $2,025
LAP 1 Introduction to Programmable Controllers
LAP 2 Basic PLC Programming
LAP 3 PLC Motor Control
LAP 4 Discrete I/O Interfacing
LAP 5 Introduction 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: $379
LAP 13 Analog Input Modules
LAP 14 Analog Output Modules
LAP 15 Analog Scaling

PLC ALLEN BRADLEY SLC500 DATA HIGHWAY 485 SYSTEM – ZTEC 404
Average time for course completion: 10 hours
Investment: $239
LAP 16 Introduction to DH-485
LAP 20 Remote I/O

PLC ALLEN BRADLEY SLC500 PANELVIEW DH-485 SYSTEM W/ KEY PAD – ZTEC 405
Average time for course completion: 15 hours
Investment: $379
LAP 17 Introduction to Panelview
LAP 18 Panelview Application Editing 1
LAP 19 Panelview Application Editing 2

PLC ALLEN BRADLEY TROUBLESHOOTING LEARNING SYSTEM AB CONTROLLOGIX – ZTEC 406
Average time for course completion: 80 hours
Investment: $2,025
LAP 1 Introduction to Programmable Controls
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: $505
LAP 13 Analog Input Modules
LAP 14 Analog Input Configuration and Troubleshooting
LAP 15 Analog Output Modules
LAP 16 Analog Output Configuration and Troubleshooting

PLC ALLEN BRADLEY PANELVIEW PLUS LEARNING SYSTEM – ZTEC 408
Average time for course completion: 15 hours
Investment: $379
LAP 1 Introduction to PanelView Plus
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: $525
LAP 1 Industrial Communications Networks
LAP 2 Remote Input/Output
LAP 3 Produce/Consume Data and Message
LAP 4 Troubleshooting EtherNet/IP

PLC ALLEN BRADLEY DEVICE NET FOR CONTROLLOGIX – ZTEC 429
Average time for course completion: 15 hours
Investment: $379
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: $379
LAP 1 Industrial Communications Networks
LAP 2 Remote Input/Output
LAP 3 Produced/Consumed Data and Messages

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

**PLC ALLEN BRADLEY COMPACTLOGIX - L16**  
**ZTEC 454**  
Average time for course completion: 80 hours  
Investment: $2,025  
LAP 1 - Introduction to Programmable Controllers  
LAP 2 - Basic PanelView Terminal Operation  
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

**NEW**

**PLC TROUBLESHOOTING ALLEN BRADLEY COMPACTLOGIX - L16**  
**ZTEC 455**  
Average time for course completion: 20 hours  
Investment: $505  
LAP 1 - Introduction to PLC Troubleshooting  
LAP 2 - PLC Systems Troubleshooting  
LAP 3 - Analog Input/Output Troubleshooting  
LAP 4 - Analog Application Troubleshooting

**NEW**

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

INDIVIDUAL COURSES
UPGRADE YOUR SKILLS - PLC LAB

STUDENTS & EMPLOYERS

Siemens

PLC TROUBLESHOOTING - SIEMENS S7300 – ZTEC 412
Average time for course completion: 80 hours
Investment: $2,025
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 ANALOG LEARNING SYSTEM SIEMENS S7-300 – ZTEC 413
Average time for course completion: 25 hours
Investment: $525
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: $365
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

MPC (SIEMENS TP1200 OPERATOR PANEL) LEARNING SYSTEM – ZTEC 415
Average time for course completion: 15 hours
Investment: $379
LAP 1  Introduction to Siemens HMI Panel
LAP 2  Application Editing 1
LAP 3  Application Editing 2

MASTERING PROGRAMMABLE CONTROLLERS – ZTEC 444
Average time for course completion: 5 hours
Investment: $139
LAP 1  Remote Input/Output

PROCESS CONTROL SYSTEM – ZTEC 416
Average time for course completion: 60 hours
Investment: $1,425
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: $1,425
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

ANALYTICAL PROCESS CONTROL – ZTEC 432
Average time for course completion: 60 hours
Investment: $1,205
LAP 1  Introduction to Process Control
LAP 2  Instrument Tags
LAP 3  Piping and Instrumentation Design
LAP 4  Introduction to Analytical Process Control
LAP 5  pH Electrodes
LAP 6  pH Meters and Transmitters
LAP 7  Loop Controllers
LAP 8  pH Control Systems
LAP 9  Methods of Automatic Control
LAP 10  Control Loop Performance
INDIVIDUAL COURSES
UPGRADE YOUR SKILLS - ROBOTICS LAB

Automation has crossed into all plateaus of modern manufacturing. From raw materials to the finished product, manual labor has been replaced with robots, automatic equipment and computer networks, all in effort to produce items that are more accurately made and less costly to manufacture. The workforce needed to service these industries now and in the future will require additional skills.

The Flexible Manufacturing System builds on basic robot operation and programming and adds linear motion, serial communications and multitasking applications.

**FLEXIBLE MANUFACTURING SYSTEMS – ZTEC 510**
Average time for course completion: 50 hours
Investment: $1,375
LAP 1 Intro to Flexible Manufacturing Systems
LAP2 Point-to-Point Assembly
LAP 3 Linear Motion Assembly
LAP 4 Palletizing
LAP 5 Robot FMS Workcell
LAP 6 Robot Communications
LAP 7 Serial Device Applications
LAP 8 Multitasking

**ROBOTICS AND COMPUTER PROGRAMMING – ZTEC 543**
Average time for course completion: 50 hours
Investment: $1,375
LAP 1 Basic Robot Operation
LAP 2 Basic Robot Programming
LAP 3 Interfacing & Material Handling
LAP 4 Application Development
LAP 5 Flexible Manufacturing Cells
LAP 6 Quality Control
LAP 7 Production Control
LAP 8 Workcell Development

**MOTION CONTROL (SERVO) LEARNING SYSTEM – ZTEC 520**
Average time for course completion: 36 hours
Investment: $1,155
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 Controls

**INTRO TO FANUC® ROBOTS WITH HANDLING TOOL SOFTWARE – ZTEC 554**
Average time for course completion: 8 hours
Investment: $275
Overview of Course and Industrial Robots Safety, Robot Systems, Teach Pendant Overview Power-up and Jogging Frames Overview, Programs. Instruction Overview, Input/Output Hands-on labs and Quizzes

**MOTION CONTROL (SERVO) LEARNING SYSTEM 2 – ZTEC 521**
Average time for course completion: 24 hours
Investment: $765
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 Systems
LAP 2 Motion Control Camming
LAP 3 Synchronized Motion

**MOTOMAN FS100 BASIC PROGRAMMING WITH MATERIAL HANDLING - ZTEC 556**
Average time for course completion: 32 hours
Investment: $1925/student
This training is provided by RACC as a Motoman Merit Certified facility. Designed to teach programming and operation of the FS100 Robot Controller and Programming Pendant (similar to the DX100). This training combines hands-on learning, classroom lectures, and demonstrations.

Topics include safety, startup and shutdown, pendant overview, jogging in all coordinate systems, copying creating, deleting and editing jobs, alarm and error recovery, programming and monitoring I/O, using math and position variables, etc. Upon completion students will receive a certificate of completion from Yaskawa and 2.6 CEUs with a score of 70% or better on the final exam.

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

MOTOMAN FS100 BASIC PROGRAMMING WITH MATERIAL HANDLING
ZTEC 556
32 hours
$1925/student

This training is provided by RACC as a Motoman Merit Certified facility. The course is designed to help students learn to program and operate the FS100 Robot Controller and Programming Pendant (similar to the DX100). This training combines hands-on learning, classroom lectures, and demonstrations.

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To learn more about our ever expanding workforce development offerings visit our website [https://sttc.racc.edu](https://sttc.racc.edu)

- **Up-to-date Training & Events Calendar**
- **Technology Training and Programs**
- **Operational Excellence Training and Programs**
- **WEDnet News & Information**
- **Workforce Development News**

Visit us at [https://sttc.racc.edu](https://sttc.racc.edu)

Our Workforce Development Team delivers custom training solutions that meet your needs. Contact Allison Creveling (610.607.6208, acreveling@racc.edu) or Mike Salute (msalute@racc.edu) for details.
OPERATIONAL EXCELLENCE
IMPROVING PRODUCTIVITY

Partnered with Nimble Leader to Deliver Actionable Expertise

Tools for Profit™
A business framework and process that links what a business stands for in the minds of customers.

SHAPE
A catalyst for action to efficiently focus the attention and discussion of your management team to prioritize limited resources to achieve maximum gain.

Transforming the World of Work with Lean Workshops

- **Introduction to Lean** - Intro to Lean Principles
- **Lean Enterprise Steering Team** - Creating a roadmap for your lean journey
- **Value Stream Management** - Eight Steps to Planning, Mapping & Sustaining Lean Improvements
- **Leader, Facilitator, and Coach** - Continuous Improvement Change Agent
- **5S Workplace Organization** - Five Pillars of the Visual Workplace
- **Mixed Model Kanban** - Lean Replenishment Technique for Pull Production
- **Flow Cells - Continuous Flow** - Flow for Work Teams
- **Overall Equipment Effectiveness** - Shop-floor Autonomous Maintenance
- **Quick Changeover** - The SMED System
- **Root Cause and Corrective Action** - Technicomp’s Corrective Action Program
- **Kaizen for the Shop-floor** - Continuous Improvement Event
- **Lean Office** - Eight Steps to Planning, Mapping & Sustaining Lean Improvements in administrative areas.

Our Workforce Development Team delivers custom training solutions that meet your needs. Contact Allison Creveling (610.607.6208, acreveling@racc.edu) or Mike Salute (msalute@racc.edu) for details.
Transition from Staff to Supervisor / Team Lead

ZBUS - 432 - 6 hrs
This workshop will prepare newly promoted supervisors or team leads to successfully address challenges they face in their new role. Key focus areas include:

- Effective Coaching Techniques
- Effective Time Management Strategies
- Communication Skills; Giving and Receiving Constructive Feedback
- Understanding and Supervising Different Generations
- Conflict Management / Dealing with Difficult Behaviors

Offered - 8:30am-3:30pm  $495
Contact us for scheduled Workshop dates.

How to Hire, Train, Coach & Retain Millennials
ZBUS - 400 - 3 hrs
Understanding the “why” of Millennials, techniques on how to successfully recruit this generation, a four-step coaching model to help them grow within the organization, putting together a successful training program that will fit their needs, what can we as an organization learn from this generation.

Communication Skills & Understanding Different Personalities
ZBUS - 391 - 3 hrs
Communicating in today's new work environment, ensure the message you send carries the impact you want, develop productive communication skills in teams, identify your personality style, communicate effectively to different personality styles, become more assertive without being aggressive.

Getting It All Done: How to Manage Your Time & Multiple Projects
ZBUS - 395 - 3 hrs
Clarify objectives and plan for results, set up group goals and priorities, learn how to have more time for yourself and family, eliminate time-wasters in your life, learn how to say “no,” how to use technology to achieve results, respond rather than react, reduce the stress in your life.

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Conducting Performance Appraisals & Evaluations
ZBUS - 399 - 3 hrs
Learn how to create an Evaluation & Appraisal meeting, how to measure exceeds, meets and needs improvement, how to tie your appraisal into organization goals, how to use the appraisal process daily, how to deal with the unexpected behaviors, being comfortable and confident in this process.

Understanding & Supervising Different Generations
ZBUS - 393 - 3 hrs
Understand different generations; Old School, Baby Boomers, Gen X, Millennials, or Gen Y. Techniques to create a more productive workplace. Learn how to cope and communicate effectively with each generation. Techniques to motivate each generation.

Conflict Management & Dealing with Difficult Behaviors
ZBUS - 392 - 3 hrs
Understand the thinking and behaviors that lead to conflict, identify new ways to communication in a conflict situation, establish a new process for conflict resolution, steps on how to deal with that angry person, techniques on how to manage different types of difficult people, stress management techniques.

Training the Trainer
ZBUS - 433 - 3 hrs
New technologies have resulted in the “age of specialization”. Can your key employees “teach” the job they perform daily to your new hires? Stay competitive, productive and profitable by adopting results-driven training methodologies that engage the adult learner.

Delivering Superior Customer Service
ZBUS - 426 - 3 hrs
Today, “servicing” your customer is not enough. If you want to delight and retain your valued customers (external and internal), you must consistently EXCEED their expectations. No longer relegated to the “complaint department” or the “customer service department” - everyone who contacts customers must offer superior support and service. This high-energy seminar provides specific techniques to turn every employee into an ambassador, opening doors to future business.

Effective Sales Training
ZBUS - 425 - 6 hrs
This program outlines the habits, activities and techniques that drive successful salespeople (both inside and outside) to consistently exceed their goals.

You will learn how to balance your activities prospecting, servicing and selling along with techniques to upgrade your “how can I sell you” mentality into the more productive “how can I service you” and win your customers’ expanding business. Understand time and territory management, how to measure and track your sales numbers and the highly productive “one more call concept” before you close out the day.

Key Takeaways:
• Creating a consultant mindset
• Prospecting techniques to capture the pulse of your territory
• The successful sales interview - what questions to ask and why
• Understanding your selling style and your customer’s buying style
• How to handle objections based on the 80/20 rule
• Learning to measure and track success, sales by the numbers
• The eight steps of an effective sales presentation
• Closing more sales (professional salesperson vs. professional visitor)

Our Workforce Development Team delivers custom training solutions that meet your needs. Contact Allison Creveling (610.607.6208, acreveling@racc.edu) or Mike Salute (msalute@racc.edu) for details.
OSHA General Industry 10 & 30* Hour Courses

Specific Topics included in the 10 hour General Industry course:
(can also be offered as stand-alone training courses)

- Introduction to OSHA
- Electrical Safety
- Machine Guarding
- Ergonomics
- Personal Protective Equipment
- Hazard Communications
- Walking Working Surfaces, Fall Protection
- Lock Out Tag Out

*The 30-hour training program is intended to provide workers with some safety responsibility a greater depth and variety of training. All outreach training is intended to cover an overview of the hazards a worker may encounter on a job site. Training emphasizes hazard identification, avoidance, control and prevention.

- Additional OSHA Topics:
  - Respiratory Protection
  - Material Handling
  - Safety Programs
  - Confined Space Awareness
  - Job Safety Analysis/Hazard Assessment
  - Powered Industrial Equipment/Forklifts (Classroom)

Emergency Response Preparedness

- Industrial Fire Brigade, Basic
  Provides basic incipient level fire training for general employee groups, or dedicated incipient level fire brigades. Course covers chemistry of fire, hose and nozzles, fire streams, portable fire extinguishers, automatic systems, and live fire fighting exercises on incipient level fires with extinguishers and small hose streams. The program also reviews fire prevention activities.

- Industrial Fire Brigade, Extended
  Provides fire brigade training per the OSHA Guidelines. Course covers or refreshes all items covered in the Basic Fire Brigade Training Program, plus self-contained breathing apparatus, ropes and knots, ladders, search and rescue practices, and interior structural fire fighting exercises.

- Fire Extinguishers
  Prepares employees to properly and safely react to a fire in their work place. Trains new employees or refreshes current employees in their fire safety responsibilities. Topics covered: basic fire prevention, evacuation, extinguisher selection and use.

- Hazardous Materials Awareness (HAZWOPER)
  Prepares employees to recognize the presence of a hazardous material/WMD and to call for trained personnel to assist, secure and protect the area. This course will meet the requirement for annual review under 29 CFR 1910.120 for emergency response.

- Hazardous Materials Operations (HAZWOPER)
  Provide the training needed to comply with Operations Level training identified in the NFPA 472 Core Competencies and in the Hazardous Materials Waste Operations and Emergency Response (HAZWOPER) regulations.

- Hazardous Materials Technician (HAZWOPER)
  Prepares employees in the necessary knowledge and skills, to recognize the presence of a hazardous material or WMD, select applicable decontamination procedures, and control a release using specialized protective clothing and control equipment and meet the competencies at the awareness and operations level.

Our Workforce Development Team delivers custom training solutions that meet your needs. Contact Allison Creveling (610.607.6208, acreveling@racc.edu) or Mike Salute (msalute@racc.edu) for details.
The Information Technology offerings at the Schmidt Training and Technology Center are real-life oriented: theory, hands-on, and problem-solving based. Hardware courses take advantage of the state-of-the-art facility so you can perform hands-on experiments and our detailed exercises give a solid, practical foundation in your technology area. All learning and progress is competency-based, utilizing interactive, individualized learning with flexible scheduling.

<table>
<thead>
<tr>
<th>Job Prospects</th>
<th>Timeframe</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Help Desk Support, Hardware Tech</strong></td>
<td>6 months</td>
<td><strong>CompTIA A+ Certification</strong></td>
</tr>
<tr>
<td><strong>IT Tech, Desktop Support</strong> (foundational training for an IT career)</td>
<td></td>
<td><strong>IT Essentials, Fundamentals - ZCOM 336</strong></td>
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<tr>
<td></td>
<td></td>
<td><strong>IT Essentials, Advanced - ZCOM 337</strong></td>
</tr>
<tr>
<td><strong>Entry Level Network Tech</strong></td>
<td>6 months</td>
<td><strong>Cisco Networking Academy - CCENT</strong></td>
</tr>
<tr>
<td><strong>Field Service Technician, NOC Technician</strong></td>
<td></td>
<td><strong>Intro to Networks – ZCOM 413</strong></td>
</tr>
<tr>
<td>(preparation for small sized network operations)</td>
<td></td>
<td><strong>Routing &amp; Switching Essentials – ZCOM 414</strong></td>
</tr>
<tr>
<td><strong>Intermediate Level Network Tech</strong></td>
<td>CCENT + 6 months</td>
<td><strong>Cisco Networking Academy CCNA</strong></td>
</tr>
<tr>
<td><strong>Network Administrator, Network Engineer</strong></td>
<td></td>
<td><strong>CCENT courses plus:</strong></td>
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<tr>
<td>(preparation for small to mid sized network operations)</td>
<td></td>
<td><strong>Scaling networks – ZCOM 415</strong></td>
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<td></td>
<td><strong>Connecting Networks - ZCOM 416</strong></td>
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<tr>
<td><strong>Network Security</strong></td>
<td>CCENT + 4 months</td>
<td><strong>CCNA Security – ZCOM 408</strong></td>
</tr>
<tr>
<td><strong>Security Analyst, Network Admin, IT Security Specialist</strong></td>
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<td>(CCENT required)</td>
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</tbody>
</table>

Schmidt Training and Technology Center Labs conveniently open Monday through Friday, accommodating both day and evening students.

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

Certificate and Degree Programs
Information Technology, A+, Cisco Networking Academy®

CompTIA A+

Course Description
The IT Essentials courses are designed for students who want to pursue careers in IT and students who want to gain practical knowledge of how a computer works. Students who complete these courses will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Students will also be able to connect to the Internet and share resources in a networked environment. Additional topics covered include laptops and portable devices, wireless connectivity and basic implementation skills, Voice over Internet Protocol (VoIP), security, safety and environmental issues, applied network configuration and troubleshooting skills, and communication skills. Hands-on lab activities are essential elements that are integrated into the curriculum. Labs are designed to supplement learning and provide hands-on experience with physical equipment. Now including Mac IOS and Linux basics with added emphasis on mobile and wireless technologies. Prerequisite: general knowledge of the use of a computer.

Hands-on

A+ SERIES: IT ESSENTIALS
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.

Aligns with 220-901 & 220-902 CompTIA A+ Certification exams

IT Essentials - Fundamentals
ZCOM-336 $1,650
Textbook additional fee. Includes test fee.
Approximate time to complete: 200 hours

IT Essentials - Advanced
ZCOM-337 $1,550
Includes test fee.
Prerequisite of ZCOM 336
(use book from ZCOM 336)
Approximate time to complete: 200 hours

These courses have an open start date.
Contact 610.372.4721, ext 5716 or jvecchio@racc.edu for details.
The Cisco CCNA Routing and Switching curriculum is designed for students seeking entry-level jobs in the Information and Communications Technology (ICT) industry or hoping to fulfill prerequisites to pursue more specialized ICT skills. The program provides an integrated and comprehensive coverage of networking topics, from fundamentals to advanced applications and services, while providing opportunities for hands-on practical experience and career skills development.

The program is composed of four courses. After the first two courses (Introduction to Networks and Routing & Switching Essentials), students will be prepared to sit for their CCENT® certification exam. At that point, students can continue their studies in other concentration areas including CCNA Routing and Switching® and CCNA Security®.

**ROUTING AND SWITCHING ESSENTIALS (CCNA 2)**
ZCOM-414 $975 for 90 hours
Textbook additional fee.
Includes exam fee as pre-paid plus grade-based vouchers*

This course describes the architecture, components, and operations of routers and switches in small to medium sized networks. Students learn how to configure routers and switches for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches. Topics include LAN switching technologies and connecting LANs using static and dynamic routing protocols i.e. OSPF. Additionally, inter-VLAN routing methods are explained before learning to control and limit such access for added network security. Automated IP addressing, DHCP, is configured as well as Network Address Translation for IPv4. Additional IPv6 topics and configurations are also covered. New topics include Device Discovery for network mapping, Password Recovery and more. Prerequisite of ZCOM 413

* Reasonable eligibility restrictions apply for the grade-based vouchers, we do not offer a pre-paid voucher for the CCNA composite exam

**INTRODUCTION TO NETWORKS (CCNA 1)**
ZCOM-413 $795 for 90 hours
Textbook additional fee.

This initial networking course introduces the architecture, structure, functions, components and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Students will be able to build simple LAN’s, perform basic configurations for routers and switches, and implement IP addressing schemes. This course also introduces students to the use of debugging and network troubleshooting.

Successful completion of these two courses prepare students to sit for their CCENT® certification exam. (Aligns to Cisco certification exam 100-105)
CCNA Routing and Switching - CCNA

SCALING NETWORKS (CCNA 3)
ZCOM-415 $795 for 90 hours
Textbook additional fee.
This course describes the architecture, components, and operations of routers and switches in a larger and more complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF (single & multi-area), EIGRP, STP, VTP, DTP, FHRP’s and more in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement WLAN’s in small to medium sized networks as well as the configuration and management of Cisco IOS images and licensing.

COMPUTING NETWORKS (CCNA 4)
ZCOM-416 $975 for 90 hours
Textbook additional fee.
Includes exam fee as pre-paid plus grade-based vouchers*. This course discusses the WAN technologies and network services required by converged applications in a complex network. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students will also develop the knowledge and skills needed to implement and troubleshoot GRE & IPSec VPN operations. Also expanded to BGP, LAN security, SPAN, SNMPv3 configuration, QoS, NetFlow, IPv6 ACL troubleshooting, Cloud Services, Virtualization, SDN network programming and more.

Successful completion of these two courses plus the CCENT® certification prepare students to sit for their CCNA® certification exam. (Aligns to Cisco certification exam 200-105)

CCNA Security

CCNA SECURITY
ZCOM-408 $1,275 for Approx. 90 hours
Textbook additional fee.
Includes exam fee as pre-paid plus grade-based vouchers*. Suggested Prerequisite: CCNA 1 and CCNA 2
Security and risk-management skills are among the most highly sought after skills in networking. Organizations around the world are experiencing a shortage of qualified IT candidates with the specialized knowledge and skills needed to administer devices and applications in a secure infrastructure, recognize network vulnerabilities, and mitigate security threats.

The Cisco Networking Academy® CCNA Security course provides a next step for individuals who want to enhance their CCENT-level skill set and help meet the growing demand for network security professionals.

COMING IN SPRING 2019

CCNA INDUSTRIAL/IoT
The Cisco Network Associate Industrial (CCNA Industrial) certification is for plant administrators, control system engineers and traditional network engineers in the manufacturing, process control, and oil and gas industries, who will be involved with the convergence of IT and Industrial networks. This course provides candidates the necessary skills to successfully implement and troubleshoot the most common industry standard protocols while leveraging best practices needed for today’s connected networks.
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 610.372.4721, ext 5716 or jvecchio@racc.edu for details.
SPECIALTY TRAINING
WASTEWATER TREATMENT PLANT OPERATOR

What’s Your Goal?
Join the field of Wastewater Treatment as a Plant Operator? Obtain your certification as a licensed plant operator? Earn continuing education units to maintain an existing certification? If so, then RACC’s Wastewater Treatment Plant Operator Program can help you reach your goal.

We Help You Get There With . . .
• Instructors who are certified operators and/or subject-matter experts
• Engaging classroom experiences
• Field trips to better understand treatment processes
• Access to DEP Exams in Fall & Spring

Program Description
RACC offers a 180-hour certification program designed to prepare new operators for licensing in the high demand field of wastewater treatment plant operators. The program curriculum was developed by the Pennsylvania Department of Environmental Protection (DEP) to prepare for the DEP’s Operator Certification Exams. Combining this program with work at a local treatment facility will prepare participants for licensing.

How You Will Learn
This program combines course work with onsite visits to local WWT facilities, plus interactive class discussion with certified operators, out of class assignments, and module end exams.

Career Outlook
• Wastewater Operators are in demand as current workforce nearing retirement age
• 5,200 employed across PA in 2016*
• 160 job openings every year in PA.*
• Competitive Salary Range $28,740* - $68,380*

Admission Requirements
• Be a graduate of an approved secondary school or hold a equivalency diploma (GED®).
• Have a commitment to attendance policies, program requirements, academic honesty policy and student responsibilities.

Currently Working in Wastewater Treatment and Having Trouble Passing Certification
• You can take any program component for $285
• Email Allison Creveling at acreveling@racc.edu or call 610.607.6208

Want To Learn More?
Visit our Welcome Center in the Berks Hall lobby. Or email Allison Creveling at acreveling@racc.edu or call 610.607.6208.

Register On-line
www.racc.edu/academics/course-registration-course-catalogs
1. Select the “Register and Pay for Community Education Classes” link.
2. Select the drop-down box “Topic Code”, select Business and click “Submit”.
3. Select ZWTR 120 and/or ZWTR 121 and click the “Submit” button.
4. Verify your class and payment, then select REGISTER NOW and complete credit card information.

*Onetonline.org

Cost for the full 180-hour certification program for program year 2018-19 is $2,400. The second half of the program includes a scholarship opportunity. Cost for each 18-hour component is $285.
What’s Your Goal?
If your goal is to start or improve your career in the electric utility field as an Electrical Line or Substation Worker, then completion of RACC’s Electric Utility Technology Associate of Applied Science degree is a great place to start.

We Help You Get There With . . .
• Lecture class sizes of 33 students or fewer
• Engaging classroom experiences
• Hands-on training
• Learner-focused faculty

Program Description
This program is offered in partnership with FirstEnergy. Students gain knowledge and skills in AC/DC electricity, electrical circuits, electrical control wiring, wiring systems, transformers, power generation and power distribution. In addition to classroom and laboratory instruction, students also participate in hands-on training at a local FirstEnergy electric utility company training facility.

Enrollment in the program is restricted by a selection process conducted by FirstEnergy and employment for graduates with FirstEnergy is not guaranteed.

Career Outlook
Electrical Line and Substation Workers are in high demand with an expected increase of 15% in employment in Pennsylvania from 2012 to 2022 and 190 job openings every year in the state.

What You Will Learn
• The OSHA safety guidelines for the electric utility industry.
• The operation of equipment used in the maintenance and repair of electric utility systems.
• The experience and knowledge needed for a Commercial Drivers License (CDL).
• The skills to work on above ground and underground circuits and de-energized and energized circuits

Admission Requirements
• Be a graduate of an approved secondary school or hold a high school equivalency diploma (GED®).
• Complete and submit the RACC Application for Admission.
• Take RACC placement tests in reading, writing and mathematics, which may increase the number of courses required if not placed into college-level English Composition or mathematics

Course Completion Information
• Students must be accepted into FirstEnergy’s Power Systems Institute program and meet the following additional requirements in order to be considered for the program: Technical Evaluation, Physical Capabilities Assessment, Background Check, DOT Medical Examiner’s Certificate, Potential Drug Test, Qualifying School and an Interview.
• The number of students who can be accepted into FirstEnergy’s Power Systems Institute is limited due to operational staffing needs.
• Students will need to complete the RACC placement exams for reading, writing and mathematics to be considered RACC degree-seeking students.

Please call Bonnie Spayd at 610.372.4721, ext. 6207 for additional information on this program.
Our online course can start you on a path to an in-demand profession or help advance your current career with industry certification. You may begin these programs at any time and learn at your own pace. Upon successful completion of all coursework you will receive a certificate of completion.

All materials are included in the course fees. Each course has an instructor assigned to answer questions and solve student problems.

Features:
- 6-18 month self-paced, start anytime
- Textbook and materials included
- Prepare for industry certification
- Certification exam vouchers are included
- Financial assistance available
- Student advisors provide you coaching, motivation, and career readiness support

Schmidt Training and Technology Center

JAUMP START YOUR CAREER OR FIND A NEW ONE!

Certified Administrative Professional with Microsoft Office Master 2016 (Vouchers Included)
This program provides the information you need to know to sit for the Certified Administrative Professional (CAP) exam offered by the International Association of Administrative Professionals (IAAP) and the Microsoft Office Master 2016 Certification exams. 

335 HRS

Certified Administrative Professional with Microsoft Office Specialist 2016 (Vouchers Included)
This program provides the information you need to know to sit for the Certified Administrative Professional (CAP) exam offered by the International Association of Administrative Professionals (IAAP). 

425 HRS

Certified Bookkeeper
The Certified Bookkeeper Online Training Program helps professional bookkeepers earn prestigious American Institute of Professional Bookkeepers (AIPB) certification. 

140 HRS

Clinical Dental Assistant
The Clinical Dental Assistant Online Training Program will provide you with the skills you need to become a dental assistant. After you’ve completed this program, you’ll be ready to pursue certification as a dental assistant by passing the radiology and infection control portions of the Dental Assisting National Board examination. 

240 HRS

CPC Certified Medical Administrative Assistant with Medical Billing and Coding (Vouchers Included)
The CPC Certified Medical Administrative Assistant with Medical Billing and Coding is geared towards students who are interested in obtaining a career in the healthcare industry, but have little to no experience within the sector. 

500 HRS

CPC Medical Billing and Coding (Voucher Included)
This Medical Billing and Coding program with 60 hours of medical terminology training, gives you a competitive edge in entering the healthcare field. 

340 HRS

Grant Writing + Non-Profit Management
In this program, you will learn how to write a grant proposal, how to supervise employees, as well as the liabilities that non-profits encounter. 

600 HRS

Home Inspection Certificate
Learn about standards of practice, defects recognition, inspection guidelines, reporting methodologies, and liability management as you prepare to become a home inspector. 

200 HRS

Human Resources Professional
Master the skills you need to gain an entry-level position in human resources and prepare to take the PHR (Professional in Human Resources) certification exam. 

120 HRS

Mastering Project Management with PMP Prep
This program takes you beyond the basics of project management. In this intermediate/advanced level program, you’ll translate your knowledge into skills by exploring key project management topics in depth. 

150 HRS

Optician Certification Training
Master the skills you need for a successful career as an optician and prepare yourself to take the ABO certification exam. 

150 HRS

Oracle SQL and PL/SQL + Python Developer + Java Programmer
Master Oracle Programming in this combined online training that teaches. As the perfect starting point for those wanting to learn SQL, PL/SQL, Java, and Python programming, this online program will teach you everything from the basics to advanced practices. 

265 HRS

Paralegal (Voucher Included)
In this program you will prepare you to become a legal secretary or paralegal and to take the Certified Paralegal certification exam. 

300 HRS

Pharmacy Technician (Voucher Included)
Pharmacy technicians support licensed pharmacists in providing health care to patients. Train to enter this rapidly growing field with this respected online program. 

400 HRS

Veterinary Assistant
This program will prepare you to become a productive member of a veterinary team. 

225 HRS

Web Applications Developer
Master the skills you need to create dynamic database-driven websites using the latest technologies. 

380 HRS

CCA Medical Billing and Coding (Voucher Included)
This Medical Billing and Coding program with 60 hours of medical terminology training, gives you a competitive edge in entering the healthcare field. 

340 HRS

Certified Medical Administrative Assistant (CMAA) (Voucher Included)
This course teaches you how Administrative Medical Assistants are versatile and valuable members of the healthcare team who handle a broad range of duties. You will also be prepared for the Certified Medical Administrative Assistant (CMAA) national certification exam offered by National Healthcareer Association (NHA). 

160 HRS

To Enroll or learn more, visit or call us at careertraining.ed2go.com/readingacc/ 610.372.4721 Ext. 5176
INSTRUCTOR-LED ONLINE COURSE BUNDLES

RACC’s ed2go Programs

Microsoft Office 2016 Value Suite
Learn to use the basic features of Microsoft Word 2016, Microsoft Excel 2016, and Microsoft Power Point 2016, three of the most fundamental software programs used in educational and professional settings.

Microsoft Excel 2016 Series
Learn to use basic, intermediate, and advanced features of Microsoft Excel 2016.

Web Design Value Suite
Create your own webpages and websites after learning everything from web design layout to CSS3/HTML5 and Javascript.

Basic Computer Skills Suite
Learn essential computer skills for the 21st century workplace, including how to troubleshoot PC issues!

Project Management Suite
Learn the fundamentals of project management in this discounted suite of online courses.

HTML and CSS Series
Learn how to use CSS3 and HTML5 to create professional-quality websites for desktops, laptops, and mobile devices.

Computer Networking Suite
Learn the fundamentals of networking and prepare for a career in an exciting and fast-growing field.

PMP Series
Learn how to prepare for the Project Management Institute’s prestigious PMP certification exam.

Microsoft Word 2016 Series
Learn the ins and outs of Microsoft’s newest release of Microsoft Word. The discounted bundle teaches you everything you need to know about the 2016 release.

QuickBooks 2016 Series
Master the fundamentals and more advanced functions of QuickBooks 2016. Learn everything from creating statements to using batch invoicing and managing journal entries.

Supervision and Management Series
Whether you’re new to managing employees or a seasoned pro, these courses will help you brush up on your leadership and interpersonal communications skills, to help you lead your team to success.

Accounting Fundamentals Series
If you’re interested in increasing your financial awareness while also gaining a marketable skill, this series of courses is perfect for you.

PHP and MySQL Series
Learn how to create interactive websites, including how to create an interactive online store complete with an online catalog of products.

These bundles allow you to take multiple courses at a discounted price while gaining an in-depth understanding of the subject area. Our instructor-led online courses are informative, fun, convenient, and highly interactive. We focus on creating warm, supportive communities for our learners and offer new course sessions monthly.

Visit our website to view start dates for the courses that interest you.

Features:
- Expert Instructor
- 24-Hour Access
- Online Discussion Areas
- 6 Weeks of Instruction Per Course
- Hundreds of Courses to Choose From
- Monthly Start Sessions

Complete any of these courses entirely from your home or office at any time of the day or night!

To Enroll or learn more, visit or call us at
www.ed2go.com/readingacc • 610.372.4721 Ext. 5176

racc.edu
Everyone who successfully meets the scoring requirements established by the state of Pennsylvania will receive a High School Equivalency Diploma from the Department of Education. This diploma is accepted, by law, as a legitimate high school diploma by business, industry, colleges, and most branches of the armed services.

Note to previous test takers: If you have passed part of the GED® test between January 1, 2002 and December 31, 2013, you may be eligible to receive credit for those sections. You will need to create an account at www.MyGED.com. One of the questions during registration asks, “Did you take any sections of the 2002 Series GED® test in Pennsylvania between 1/1/2002 and 12/31/13?” If you respond “yes,” the reply alerts you that the Pennsylvania Department of Education will verify your prior test score(s) and notify you by email with the sections of the 2002 Series GED® that you will be credited and not have to retake with the 2014 test.

GED® TRANSCRIPT INFORMATION

Individuals who have passed the GED® test may request a transcript through DiplomaSender. Visit diplomasender.com, create an account, request documents (electronic or paper)

Effective October 1, 2016, all Pennsylvania high school equivalency diplomas and transcripts for the GED® test will be handled by DiplomaSender.

Initial diploma and transcript will continue to be free. All documents are $15.00 per document. Documents include: transcripts, duplicate diplomas and letters of verification.

To prepare a student for the General Educational Development (GED®) test of high school equivalency, Reading Area Community College offers preparation classes, free of charge, to adults in our community. These classes meet both days and evenings at different locations throughout the county. An annual graduation is held in late Spring. Tutors are available to help students achieve success in their classwork.

GED® TEST

The GED® test is administered at Reading Area Community College through Pearson Vue testing. Pennsylvania residents (adults 18 years and older, as well as 16- and 17-year-old participants meeting specific qualifications) are eligible to take the computerized exam. All registrations, testing times, locations and payment with credit card are completed at the website gedtestingservice.com. Payment is required at the time of registration.

To earn a GED®, candidates must demonstrate a specific level of competency in the following four content areas:

- Reasoning Through Language Arts
- Mathematical Reasoning
- Science
- Social Studies

Please call 610.372.4721, Ext. 5322 for additional information about literacy programs.
Volunteer tutors are needed at Reading Area Community College for students taking classes in Adult Basic Education (ABE), General Education Development (GED) or English for Speakers of Other Languages (ESL). Are you interested?

QUALIFICATIONS
Volunteer tutors in RACC’s Adult Literacy Program must have a minimum of a bachelor’s degree.

TRAINING AND SUPPORT
As a volunteer tutor, you will receive a tutor orientation seminar that introduces you to the Adult Literacy Program at RACC, along with providing you with materials and tips. We offer an extensive library of books, and other educational materials for your use.

OPPORTUNITIES
There are several ways you can help. You may choose to tutor an individual student. A small group of students, or you may be a classroom aide. Our students are eager to learn and are very appreciative of your encouragement and support.

HOW CAN YOU BECOME A TUTOR?
Please call the Adult Literacy Program, Reading Area Community College at 610-372-4721 ext. 5155 or 5156. A Tutor Coordinator will be in touch with you to provide you more information about the program and answer any questions you may have about becoming a volunteer tutor.

HERE’S WHAT SOME OF OUR TUTORS HAD TO SAY:

“I learn more from my students than they may learn from me! (This is the best unpaid job I ever had)”

“We tutors learn as well as the students! I find it so rewarding—that’s why I come back, year after year, after year!”

“Through being a volunteer tutor, doors have been opened that have allowed me to communicate with people that otherwise I would never have had the opportunity to meet.”

Please call 610.372.4721, Ext. 5322 for additional information about literacy programs.
Associate Degree and Certificate (Credit) Programs

HOW DO I GET STARTED?

Stop by the Welcome Center in Berks Hall or complete the online application for admission at racc.edu. Whether you have questions about specific classes or programs or you are ready to enroll in classes, Enrollment Coordinators are available to help you every step of the way.

Welcome Center Hours of Operation:
- Mondays 8 am-5 pm
- Tuesdays 8 am-7:30 pm
- Wednesdays 8 am-7:30 pm
- Thursdays 8 am-5 pm
- Friday 8 am-5 pm

Or call 610.607.6224

COLLEGE CREDITS FOR LIFE EXPERIENCE
Did you know that you may be able to turn life experiences and professional knowledge into college credit? To learn more, call the Welcome Center at 610.607.6224.

For more information and to view the Admissions Event calendar, go to racc.edu/AdmissionsEvents.

Associate Degrees and Certificates

- Accounting –Now Online!
- Addictions Studies/Human Services
- Administrative Office Specialist
- Art
- Bookkeeping
- Business Administration –Now Online!
- Business Management
- Communications
- Computer Information Systems
- Computer Technology –Now Online!
- Creative Writing
- Criminal Justice/Law Enforcement
- Cyber Defense –New!
- Early Childhood Programs
- Early Childhood Teaching (PreK-Grade 4)
- Electric Utility Technology
- Elementary Education (Grades 4-8)
- Engineering
- Fine Arts
- General Science
- General Studies –Now Online!
- Health Sciences
- Liberal Arts
- Machine Tool Technology
- Mechatronics Engineering Technology
- Medical Coding and Billing Specialist
- Medical Laboratory Technician
- Medical Office/Health Records Specialist –New!
- Nanoscience Technology
- Network Support Specialist
- Nursing
- Occupational Therapy Assistant*
- Physical Therapist Assistant*
- Practical Nursing
- Psychology –Now Online!
- Respiratory Care
- Science
- Secondary Education
- Social Science –Now Online!
- Social Work –Now Online!
- Technology Studies
- Web Site Development

*Offered in cooperation with Lehigh Carbon

Please call an Enrollment Coordinator at 610.607.6224 for additional information on these programs.
Enroll immediately in the classes you want!  
The online registration system saves you time and postage costs 
and is available at your convenience.

• Go to racc.edu/academics/course-registration-course-catalogs  
  · Select the “Register and Pay for Community Education Classes” link in order to search for a class. 
  · EASY SEARCH: Select only the drop-down box next to “Topic Code” to find the class for which you would like to register and click “Submit”.
  · Select the course that you wish to register for and click the “Submit” button.
  · Enter your information and click “Submit”.

• Proceed through the next several registration screens entering the required information and submitting at end of each screen.
• Verify your class and payment, then select REGISTER NOW and complete credit card information.
• You will receive a printable confirmation when the transaction is complete.

For questions about the registration process, call 610.607.6235.

CLASS LOCATIONS: Reading Area Community College (RACC)
If the College withdraws a course, your tuition will be refunded. Instructor substitutions may be made in emergencies and at the discretion of RACC. Written refund requests must be received one week before classes begin. No refunds will be issued after this date. Please allow 4–6 weeks for a refund. Students must be 18 years old to register for adult classes.

REGISTRATION FORM
(to be used for all Community Education programs)

Please Print
Date __________________________________ RACC ID # ____________________
Name/Company Name __________________________________ SS #/Birthdate ____________________
Home/Company Address __________________________________ City ___________________ State _____ Zip __________
Home Phone _________________________ Work Phone _________________________ Email address ___________________________
Signature of Registrant _____________________________________________________________________________________________

The following information will be used for the sole purpose of providing statistical data to the Federal government. This information will not be used for admission purposes.

Ethnicity: ☐ Hispanic ☐ Non-Hispanic/Non-Latino ☐ American Indian/Alaskan Native 
☐ Native Hawaiian/Other Pacific Islander ☐ Black/African-American ☐ White 
☐ Asian

Section No ______________________________ Title ______________________________________________________________________
Section No ______________________________ Title ______________________________________________________________________
Section No ______________________________ Title ______________________________________________________________________

Read course descriptions carefully. Written refund requests must be received one week before classes begin. No refunds will be issued after this date. Tuition must be paid at the time of registration.

MAIL TO: Cashier’s Office, Reading Area Community College, P.O. Box 1706, Reading, PA 19603

Amount Enclosed $ __________________ DO NOT SEND CASH. Make check payable to Reading Area Community College.
☐ VISA ☐ MasterCard ☐ Discover Card No. __________________________ Exp. Date _________ 3 Digit Code _____
Authorized Signature __________________________________________________________

This form may be duplicated for additional registrations.
Look inside for Fall Course Offerings!

Looking for an entry-level, direct-hire job in manufacturing, with good pay and benefits? Are you having trouble checking the boxes that ask about prior certification, training or experience?

RACC has the FREE training program for you!

RACC is offering a 6-week skills building program, designed and endorsed by local employers to give you the training you need to qualify for an interview.

Learn valuable entry-level skills:
- Safety-OSHA 10
- Quality Assurance
- Process and Measurement Tools
- Skill Boss Assessment*
- Lean Manufacturing
- Engineering Drawings
- Workplace Behaviors
- Resume Writing and Interview Preparation

Contact RACC at 610.372.4721 Ext. 5716 or jvecchio@racc.edu to learn more.

*Supports Manufacturing Skill Standards Council’s Certified Production Technician Plus certification. An industry-led standards-based training, assessment and certification system focused on the core skills and knowledge needed by the nation’s advanced manufacturing workforce.