



# Altierus Career College – Catalog Addendum

## TAMPA

Addendum to the 2021 College Catalog – Version I Volume II

November 2021

The catalog addendum contains the academic calendar and any changes to policy or programming that are effective after the publication of the current catalog version identified above. In addition, this catalog addendum contains temporary changes related to the COVID-19 campus response. All information listed below is considered to be policy based on the effective date that corresponds with the item and will be deemed to remain in effect unless removed from the addendum or accompanied by an end date.

### CAMPUS ADMINISTRATION

Tampa Administration	
Tim Dengler	Campus Director
Branka Anicic	Director of Financial Aid
Amy VanAuken	Academic Dean
David Ritchie	Director of Enrollment
Diedre Gates	Director of Career Services

### CAMPUS OPERATING HOURS

Administration:	School:
<u>Monday through Thursday</u> 8:00 am to 7:00 pm	<u>Monday through Thursday</u> 8:30 am to 10:15 pm
<u>Friday</u> 8:00 am to 5:00 pm	<u>Friday</u> 8:30 am to 6:00 pm
<u>Saturday</u> 9:00 am to 1:00 pm	

## TUITION AND FEES

### For Programs Starting Before January 2022:

Diploma Program	Program Length	Quarter Credits	Tuition	Textbooks & Equipment	Total Cost (estimated)
Dental Assistant	37 weeks	54	\$15,594	Included in tuition	\$15,594
Electrical Construction Technician	36 weeks	54	\$15,594	Included in tuition	\$15,594
HVAC Technician	36 weeks	54	\$15,594	Included in tuition	\$15,594
Industrial Electrical Technician	36 Weeks	54	\$15,594	Included in tuition	\$15,594
Massage Therapy	36 weeks	48	\$12,975	Included in tuition	\$12,975
Medical Assistant	41 weeks	60	\$17,750	Included in tuition	\$17,750
Medical Billing and Coding	33 weeks	48	\$14,850	Included in tuition	\$14,850
Pharmacy Technician	33 weeks	48	\$14,850	Included in tuition	\$14,850
Refrigeration Technician	36 Weeks	54	\$15,594	Included in tuition	\$15,594
Associate of Science Program	Program Length	Quarter Credits	Tuition	Textbooks & Equipment	Total Cost (estimated)
Nursing, (RN)	24 months	108	\$320/credit hour attempted	Included in tuition	Expected total \$34,560

### For Diploma Programs and Degree Terms Starting After January 1, 2022:

Diploma Program	Program Length	Quarter Credits	Tuition	Textbooks & Equipment	Total Cost (estimated)
Dental Assistant	37 weeks	54	\$15,822	Included in tuition	\$15,822
Electrical Construction Technician	36 weeks	54	\$15,822	Included in tuition	\$15,822
HVAC Technician	36 weeks	54	\$15,822	Included in tuition	\$15,822
Industrial Electrical Technician	36 Weeks	54	\$15,822	Included in tuition	\$15,822
Massage Therapy	36 weeks	48	\$13,200	Included in tuition	\$13,200
Medical Assistant	41 weeks	60	\$18,060	Included in tuition	\$18,060
Medical Billing and Coding	33 weeks	48	\$14,976	Included in tuition	\$14,976
Pharmacy Technician	33 weeks	48	\$14,976	Included in tuition	\$14,976
Refrigeration Technician	36 Weeks	54	\$15,822	Included in tuition	\$15,822
Associate of Science Program	Program Length	Quarter Credits	Tuition	Textbooks & Equipment	Total Cost (estimated)
Nursing, (RN)	24 months	108	\$345/credit hour attempted	Included in tuition	Expected total \$37,260

*Table Updated: November 8, 2021*

Textbooks are included in the undergraduate tuition and are provided as eBook or hard copy at the School's discretion. When electronic books are issued, hard copies may be purchased at an additional cost.

Book Costs and Opt-Out Policy - The School has an arrangement with a third-party textbook provider that enables the School to make required books available to students below competitive market rates. These book costs are included in tuition, and the School provides these books to students, without additional charges, by the seventh day of the financial aid payment period. Opting out of the included books and automatic delivery of required print/electronic books and materials, is not recommended. However, students wishing to opt-out of receiving their books from the School may obtain an Opt-Out and Waiver of Supplied Books Request form by requesting one from a Financial Aid planner or student services advisor, and complete and return the form to the Financial Aid planner at least 10 days before the beginning of the term. Students who register late and wish to opt-out may receive books automatically delivered, and must return such automatically delivered books in new, unused condition. As there is no additional charge for books, opting out of receiving books from the School will not result in any change to tuition.

**The tuition table only applies to:**

1. New enrolling students. A new student is defined as a student who has never attended a Zenith Education Group school or has graduated and enrolled in a new program; or
2. Re-entering students who have withdrawn and are re-entering greater than 180 days from their withdrawal date (The withdrawn time period is calculated from the student's withdrawal date to the new module or term start date.); or
3. Re-entering degree students who are re-entering within 180 days

**For re-entering diploma students who have withdrawn and are re-entering within 180 days, the following tuition charges apply:**

- Same Program (Same / New Program Version): Will be charged tuition at the original tuition rate reflected on the original enrollment agreement less the amount charged on the prior period of enrollment (Charges plus or minus any tuition adjustments).
- Same Program (New Program Version of Different Credits / Length of Program): Will be charged tuition at the current catalog rate for the program of enrollment less the amount charged on the prior period of enrollment (Charges plus or minus any tuition adjustments).
- Different / New Program (Program Change): Will be charged tuition at the current catalog rate for the program of enrollment. A tuition credit will be determined for the student's prior period of enrollment.

## ACADEMIC CALENDARS (2021 – 2023)

### DIPLOMA MODULAR PROGRAMS

Modular/Diploma Calendar Full Blended 2021	
Start Dates	End Dates*
1/11/2021	2/07/2021
2/08/2021	3/07/2021
3/08/2021	4/04/2021
4/12/2021	5/09/2021
5/10/2021	6/06/2021
6/07/2021	7/03/2021
7/12/2021	8/08/2021
8/09/2021	9/05/2021
9/07/2021	10/03/2021
10/11/2021	11/07/2021
11/08/2021	12/05/2021
12/06/2021	1/09/2022

Modular - Full Blended Holiday/Student Breaks 2021		
Holiday/ Student Breaks**	Start Dates	End Dates
Martin Luther King Day	1/18/2021	1/18/2021
Presidents Day	2/15/2021	2/15/2021
Student Break	4/05/2021	4/11/2021
Day of Remembrance	5/28/2021	5/28/2021
Memorial Day	5/31/2021	5/31/2021
Student Break	7/04/2021	7/11/2021
Labor Day	9/06/2021	9/06/2021
Student Break	10/04/2021	10/10/2021
Thanksgiving Holiday	11/25/2021	11/26/2021
Christmas & New Year Holidays	12/24/2021	1/02/2022

<b>Modular/Diploma Calendar Full Blended 2022</b>	
<b>Start Dates</b>	<b>End Dates*</b>
1/10/2022	2/06/2022
2/07/2022	3/06/2022
3/07/2022	4/03/2022
4/11/2022	5/08/2022
5/09/2022	6/05/2022
6/06/2022	7/03/2022
7/11/2022	8/07/2022
8/08/2022	9/04/2022
9/06/2022	10/02/2022
10/10/2022	11/06/2022
11/07/2022	12/04/2022
12/05/2022	1/08/2023

<b>Modular/Diploma Student Holiday/Breaks 2022</b>		
<b>Holiday/ Student Breaks**</b>	<b>Start Dates</b>	<b>End Dates</b>
Christmas & New Year Holidays	12/24/2021	1/02/2022
Martin Luther King Day	1/17/2022	1/17/2022
Presidents Day	2/21/2022	2/21/2022
Student Break	4/04/2022	04/10/2022
Memorial Day	5/30/2022	5/30/2022
Student Break	7/04/2022	7/10/2022
Labor Day	9/05/2022	9/05/2022
Student Break	10/03/2022	10/09/2022
Thanksgiving Holiday	11/24/2022	11/25/2022
Christmas & New Year Holidays	12/24/2022	1/01/2023

<b>Modular/Diploma Calendar Full Blended 2022-2023</b>	
<b>Start Dates</b>	<b>End Dates*</b>
1/09/2023	2/05/2023
2/06/2023	3/05/2023
3/06/2023	4/02/2023
4/10/2023	5/07/2023
5/08/2023	6/04/2023
6/05/2023	7/02/2023
7/10/2023	8/06/2023
8/07/2023	9/03/2023
9/05/2023	10/01/2023
10/09/2023	11/05/2023
11/06/2023	12/03/2023
12/04/2023	1/07/2024

<b>Modular/Diploma Student Holiday/Breaks 2022 – 2023</b>		
<b>Holiday/ Student Breaks**</b>	<b>Start Dates</b>	<b>End Dates</b>
Martin Luther King Day	1/16/2023	1/16/2023
Presidents Day	2/20/2023	2/20/2023
Student Break	4/03/2023	04/09/2023
Memorial Day	5/29/2023	5/29/2023
Student Break	7/03/2023	7/09/2023
Labor Day	9/04/2023	9/04/2023
Student Break	10/02/2023	10/08/2023
Thanksgiving Holiday	11/23/2023	11/24/2023
Christmas & New Year Holidays	12/24/2023	1/01/2024

\* For programs that contain externships/practicums, the typical scheduled end date will be one week later as there is an additional scheduled week of instruction for those courses. This time is reflected in the approved program length for each applicable program. The scheduled end date will be adjusted for scheduled breaks.

\*\* Externship courses will be scheduled to exclude holiday breaks. Students working at externship sites may be asked to complete hours during these published breaks and will have attendance posted for any hours completed during any breaks.

## DEGREE LINEAR PROGRAMS

Linear - 2021				
Classes Resume		January	6	2021
Fall Term Ends		January	10	2021
<b>Winter Term Starts</b>		<b>January</b>	<b>11</b>	<b>2021</b>
Winter Term Add/Drop Deadline <i>6 Week I Courses</i>		January	17	2021
Winter Term Add/Drop Deadline <i>12 week courses</i>		January	25	2021
M.L. King Jr. Birthday Holiday		January	18	2021
Presidents' Day		February	15	2021
<b>Mini-Term Starts</b>		<b>February</b>	<b>22</b>	<b>2021</b>
Mini Term Add/Drop Deadline		February	28	2021
Winter Term Ends		April	4	2021
Spring Vacation	From:	April	5	2021
	To:	April	11	2021
<b>Spring Term Starts</b>		<b>April</b>	<b>12</b>	<b>2021</b>
Spring Term Add/Drop Deadline <i>6 Week I courses</i>		April	18	2021
Spring Term Add/Drop Deadline <i>12 Week Courses</i>		April	25	2021
<b>Mini-Term Starts</b>		<b>May</b>	<b>24</b>	<b>2021</b>
Mini Term Add/Drop Deadline		May	30	2021
Day of Remembrance		May	28	2021
Memorial Day Holiday		May	31	2021
Spring Term Ends		July	3	2021
Summer Vacation	From:	July	4	2021
	To:	July	11	2021
<b>Summer Term Starts</b>		<b>July</b>	<b>12</b>	<b>2021</b>
Summer Term Add/Drop Deadline <i>6 Week I Courses</i>		July	18	2021
Summer Term Add/Drop Deadline <i>12 Week Courses</i>		July	25	2021
<b>Mini-Term Starts</b>		<b>August</b>	<b>23</b>	<b>2021</b>
Mini-Term Add/Drop Deadline		August	29	2021
Labor Day Holiday		September	6	2021
Summer Term Ends		October	3	2021
Fall Break	From:	October	4	2021
	To:	October	10	2021
<b>Fall Term Start</b>		<b>October</b>	<b>11</b>	<b>2021</b>
Fall Term Add/Drop Deadline <i>6 Week I Courses</i>		October	17	2021
Fall Term Add/Drop Deadline <i>12 Week Courses</i>		October	24	2021
<b>Mini-Term Starts</b>		<b>November</b>	<b>22</b>	<b>2021</b>
Mini-Term Add/Drop Deadline		November	30	2021
Thanksgiving Day Holiday	From:	November	25	2021
	To:	November	26	2021
Winter Holiday	From:	December	24	2021
	To:	January	2	2022
Classes Resume		January	3	2022
Fall Term Ends		January	9	2022

Linear - 2022				
<b>Winter Term Starts</b>		<b>January</b>	<b>10</b>	<b>2022</b>
Winter Term Add/Drop Deadline <i>6 Week I Courses</i>		January	16	2022
M.L. King Jr. Birthday Holiday		January	17	2022
Winter Term Add/Drop Deadline <i>12 week courses</i>		January	24	2022
Presidents' Day		February	21	2022
<b>Mini-Term Starts</b>		<b>February</b>	<b>22</b>	<b>2022</b>
Mini Term Add/Drop Deadline		February	28	2022
Winter Term Ends		April	3	2022
Spring Vacation	From:	April	4	2022
	To:	April	10	2022
<b>Spring Term Starts</b>		<b>April</b>	<b>11</b>	<b>2022</b>
Spring Term Add/Drop Deadline <i>6 Week I courses</i>		April	17	2022
Spring Term Add/Drop Deadline <i>12 Week Courses</i>		April	24	2022
<b>Mini-Term Starts</b>		<b>May</b>	<b>23</b>	<b>2022</b>
Mini Term Add/Drop Deadline		May	29	2022
Memorial Day Holiday		May	30	2022
Spring Term Ends		July	3	2022
Independence Day Holiday		July	4	2022
Summer Vacation	From:	July	5	2022
	To:	July	10	2022
<b>Summer Term Starts</b>		<b>July</b>	<b>11</b>	<b>2022</b>
Summer Term Add/Drop Deadline <i>6 Week I Courses</i>		July	17	2022
Summer Term Add/Drop Deadline <i>12 Week Courses</i>		July	24	2022
<b>Mini-Term Starts</b>		<b>August</b>	<b>22</b>	<b>2022</b>
Mini-Term Add/Drop Deadline		August	28	2022
Labor Day Holiday		September	5	2022
Summer Term Ends		October	2	2022
Fall Break	From:	October	3	2022
	To:	October	9	2022
<b>Fall Term Start</b>		<b>October</b>	<b>10</b>	<b>2022</b>
Fall Term Add/Drop Deadline <i>6 Week I Courses</i>		October	16	2022
Fall Term Add/Drop Deadline <i>12 Week Courses</i>		October	23	2022
<b>Mini-Term Starts</b>		<b>November</b>	<b>21</b>	<b>2022</b>
Thanksgiving Day Holiday	From:	November	24	2022
	To:	November	25	2022
Mini-Term Add/Drop Deadline		November	29	2022
Winter Holiday	From:	December	24	2022
	To:	January	1	2023

Linear - 2023				
Classes Resume		January	2	2022
Fall Term Ends		January	8	2023
<b>Winter Term Starts</b>		<b>January</b>	<b>9</b>	<b>2023</b>
Winter Term Add/Drop Deadline <i>6 Week I Courses</i>		January	15	2023
M.L. King Jr. Birthday Holiday		January	16	2023
Winter Term Add/Drop Deadline <i>12 week courses</i>		January	23	2023
Presidents' Day		February	20	2023
<b>Mini-Term Starts</b>		<b>February</b>	<b>21</b>	<b>2023</b>
Mini Term Add/Drop Deadline		February	27	2023
Winter Term Ends		April	2	2023
Spring Vacation	From:	April	3	2023
	To:	April	9	2023
<b>Spring Term Starts</b>		<b>April</b>	<b>10</b>	<b>2023</b>
Spring Term Add/Drop Deadline <i>6 Week I courses</i>		April	16	2023
Spring Term Add/Drop Deadline <i>12 Week Courses</i>		April	23	2023
<b>Mini-Term Starts</b>		<b>May</b>	<b>22</b>	<b>2023</b>
Mini Term Add/Drop Deadline		May	28	2023
Memorial Day Holiday		May	29	2023
Spring Term Ends		July	2	2023
Summer Vacation	From:	July	3	2023
	To:	July	9	2023
<b>Summer Term Starts</b>		<b>July</b>	<b>10</b>	<b>2023</b>
Summer Term Add/Drop Deadline <i>6 Week I Courses</i>		July	16	2023
Summer Term Add/Drop Deadline <i>12 Week Courses</i>		July	23	2023
<b>Mini-Term Starts</b>		<b>August</b>	<b>21</b>	<b>2023</b>
Mini-Term Add/Drop Deadline		August	27	2023
Labor Day Holiday		September	4	2023
Summer Term Ends		October	1	2023
Fall Break	From:	October	2	2023
	To:	October	8	2023
<b>Fall Term Start</b>		<b>October</b>	<b>9</b>	<b>2023</b>
Fall Term Add/Drop Deadline <i>6 Week I Courses</i>		October	15	2023
Fall Term Add/Drop Deadline <i>12 Week Courses</i>		October	22	2023
<b>Mini-Term Starts</b>		<b>November</b>	<b>20</b>	<b>2023</b>
Thanksgiving Day Holiday	From:	November	23	2023
	To:	November	24	2023
Mini-Term Add/Drop Deadline		November	28	2023
Winter Holiday	From:	December	24	2023
	To:	January	1	2024
Classes Resume		January	2	2024
Fall Term Ends		January	7	2024

## CATALOG UPDATES

Any updated School policies or information since the last publication date of the catalog will be included below.

### **PROGRAM SPECIFIC ADMISSIONS REQUIREMENTS** – *Update to Nursing Requirements on Page 4 of the Catalog – Effective August 2021 for all starts after this date*

In addition to a standard high school diploma or a recognized equivalent, such as the GED, which is required for admittance to all programs offered at Altierus Career College, there may be additional program-specific admissions requirements listed below. In addition, some programs may have post-admissions or course-specific requirements. Any such requirements will not be listed here but can be found in the catalog under the specific program descriptions.

#### **Nursing Program**

- Applicants must achieve a passing score on each area of the HESI test to be considered for entrance into the Associate of Science in Nursing degree program. Minimum passing scores are defined in the Academic Readiness section of the catalog.
- Passing a criminal background check
- Prior to enrollment, provide proof of the following immunizations or screenings:
  - **Tetanus (Tdap or Td):** Tetanus booster every 10 years
  - **Measles, Mumps, or Rubella (MMR):** 2 doses OR positive titer
  - **Varicella (Chickenpox):** 2 doses (at least 4 weeks apart) OR positive titer  
If you have history of the disease, a positive titer is required.
  - **Hepatitis B (Hep B):** Completed vaccine series (2 or 3 doses dependent on series) or documentation showing a positive/reactive antibody test (HBsAb)
  - **Influenza – seasonal vaccine:** Students must provide proof of vaccination for the most current flu season at admissions and within 6 months of the start of a clinical course. May require multiple doses depending on clinical course scheduling
  - **COVID-19:** Full series of approved vaccine must be complete and current prior to admissions and the start of a clinical course. May require multiple doses depending on clinical course scheduling.
  - **Tuberculosis Screening:** TB Skin Test or Blood Assay (include lab report for assay).  
If reading is positive, chest x-ray is required subsequent to positive result.

**Waiver:** If a student is unable to receive an immunization due to medical reasons, they must discuss a medical waiver with the Surgical Technology Program Chair and provide a doctor's notice prior to enrollment. If a medical waiver is granted, documentation from the student's physician must be filed in the student file. It is also highly recommended that these students have blood testing done to show possible immunity.

**NOTE:** Applicants should be aware that some immunization series may take up to six months to complete. Students should plan accordingly. Immunization information may be shared with the Program Chair, Clinical Coordinator, and contracted agencies to allow for clinical experiences and will be protected in the student record under FERPA as described under the **Notification of Rights Under FERPA** section of this catalog.

## PROGRAM UPDATES

Any updated program information since the last publication date of the catalog, including updated program tables and additional course descriptions will be provided below.



#### **NURSING**

*Associate of Science Degree*

*24 Months – 108 Quarter Credits*

*Update – Replaces Program-specific Requirements outlined on Page 69 – Effective August 2021*

#### **PROGRAM SPECIFIC REQUIREMENTS:**

##### **Prior to clinical coursework, the following need to be completed:**

- All items Pass a fingerprinting by the State of Florida and a federal criminal background check
- Drug Screen: 10-panel test with results provided to the School
- Physical exam by a licensed practitioner.
- Proof of current immunizations or health screenings as identified in the Admissions information
- Provide a current CPR-BLS card



## ELECTRICAL CONSTRUCTION TECHNICIAN

*Diploma Program*

36 Weeks – 720 Hours – 54 Quarter Credit Hours

*Update – Program Outline on Page 48-49 – Effective for all starts after November 2021*

**PROGRAM DESCRIPTION:** The Electrical Construction Technician program is designed to prepare students for entry-level jobs installing or modifying electrical systems as part of a new construction or renovation of residential, commercial buildings, or similar projects. The program is designed for learners to acquire the specialized knowledge and skills required to successfully perform on the job including: complying with workplace safety requirements; applying electrical theory in the design, installation, and repair of circuits and devices; interpreting plans and drawings correctly; applying National Electrical Code standards to the installation of raceways, conductors, devices, and other utilization equipment; selecting appropriate materials for a given installation; and using tools and equipment properly to complete a given task.

**OBJECTIVES:** The ultimate objective of the Electrical Construction Technician program is to prepare graduates for entry-level employment with electrical contractors, or other businesses that require employees to have specialized training to install, maintain, and or repair electrical systems in buildings or related facilities. Some typical positions for graduates of this program include: Apprentice Electrician, Electrician Helper, Electrical Installer, Residential Electrician, Commercial Electrician, Facilities Maintenance Technician, Lighting Maintenance Technician and more.

**PROGRAM OUTCOMES:** The Electrical Construction Technician program provides the student with the theory and hands-on applications required to perform the following tasks:

- Calculate the correct expected values of voltage, current, resistance, impedance, and power in electrical circuits
- Measure electrical values safely using the appropriate test equipment
- Demonstrate OSHA safety compliance on the job site
- Determine the appropriate basic hand and power tools for a specific task
- Use the appropriate basic hand and power tools correctly on a job site
- Determine the minimum National Electrical Code compliance requirements for a specific electrical installation
- Interpret electrical drawings that show the size, quantity and locations of boxes, devices and fixtures accurately for a job
- Install a complete electrical system proficiently for a specific job
- Install basic control circuits correctly on a job

Course	Course Title	Lecture Hours	Lab Hours	Other Hours (Externship)	Total Contact Hours	Quarter Credit Hours
<b>Introductory Prerequisite Course</b>						
BST1000	Basic Construction Safety	55	25	0	80	6.0
<b>Core Courses</b>						
ECT1110	Electrical Theory	55	25	0	80	6.0
ECT1120	Electrical Craft Skills	55	25	0	80	6.0
ECT1130	Residential Wiring	55	25	0	80	6.0
ECT1140	Residential and Commercial Lighting	55	25	0	80	6.0
ECT1210	Electric Motors	55	25	0	80	6.0
ECT1220	Transformers and Power Distribution	55	25	0	80	6.0
ECT1230	Conductors and Overcurrent Protection	55	25	0	80	6.0
ECT1240	Advanced Control Systems	55	25	0	80	6.0
<b>PROGRAM TOTALS</b>		<b>495</b>	<b>225</b>	<b>0</b>	<b>720</b>	<b>54.0</b>



## COURSE DESCRIPTIONS

<p><b>BST 1000 – Basic Construction</b></p> <p>This course introduces students to the construction field. The course of instruction will cover basic job safety concepts and regulatory requirements, basic math used in the construction trades, the use of common hand and power tools, and an introduction to blueprint reading. Out-of-class activities will be assigned and assessed as part of this module. Prerequisites: None</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1110 – Electrical Theory</b></p> <p>Electricity makes the modern world possible by providing the power needed for lighting, air-conditioning, communications, and computers, yet how it works is a mystery to most. This course provides a basic understanding of how electrical energy is used to produce useful work, how it is measured and tested, and the calculations required for analyzing electrical circuits. Topics of study include direct-current (DC) and alternating-current (AC) systems, transformer operation, electrical test equipment, and fitting, conductors and cables. Prerequisite: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1120 – Electrical Craft Skills</b></p> <p>Electricians use specialized skills to install and repair electrical systems in homes and businesses. This course is designed for students to learn the basic skills needed in the electrical craft that include reading and comprehending electrical drawings, wiring diagrams and schematics, procedures for installing electrical conduit, boxes, wiring, and determining minimum installation requirements of the National Electrical Code, hand bending and mechanical bending of various conduit sizes and materials. Prerequisite: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1130 – Residential Wiring</b></p> <p>One of the more common jobs for an electrician is the installation or repair of the electrical system in a dwelling. This course familiarizes the student with the materials and methods used for installing a complete 120V electrical system for a typical residence. Students will learn and practice techniques for installing non-metallic sheathed cables, device boxes, receptacles, switches, lighting fixtures, circuit breaker panels, and service entrance equipment. Prerequisite: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1140 – Residential and Commercial Lighting</b></p> <p>Electrical lighting is essential in residential, commercial and industrial settings. This course prepares students to understand the basic fundamentals of lighting, successfully install residential and commercial lighting, and properly identify commonly used materials in commercial and industrial facilities. Prerequisites: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1210 – Electrical Motors</b></p> <p>One of the main uses for electricity is to make something move and this is what electric motors are used for. Motors are unique in that the amount of electrical current required to operate them changes with the load that is placed on the motor. This course explores the basic construction, operation, and maintenance of various direct-current (DC) motors, single-phase and three-phase alternating-current (AC) motors, and the minimum National Electrical Code requirements for circuits supplying motors. Students also learn to install basic control circuits to stop, start, and reverse motors. Prerequisites: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1220 – Transformers and Power Distribution</b></p> <p>One of the more common jobs for an electrician is the installation or repair of the electrical system in a dwelling. This course familiarizes the student with the materials and methods used for installing a complete electrical system for a typical residence. Students will learn and practice techniques for installing non-metallic sheathed cables, device boxes, receptacles, switches, lighting fixtures, circuit breaker panels, and service entrance equipment. Out-of-class activities will be assigned and assessed as part of this module. Prerequisites: ECT1110, ECT1120, ECT1130, ECT1140</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1230 – Conductors and Overcurrent Protection</b></p> <p>A properly installed and maintained power distribution system is critical to the operation of commercial buildings and industrial facilities. This course familiarizes the student with the various types of electrical equipment used to distribute power within a building including service entrance equipment, switchgear, transformers, and backup power sources. Additional topics include the process for calculating electrical load and proper sizing and selection of conductors. Out-of-class activities will be assigned and assessed as part of this module. Prerequisites: ECT1110, ECT1120, ECT1130, ECT1140</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1240 – Advanced Control Systems</b></p> <p>World-changing advanced controls require a primary trades person responsible for installing and maintaining them. This course introduces the basic principles of control systems, advanced control systems, low-voltage cabling, and primary logic controllers. Prerequisites: ECT1110, ECT1120, ECT1130, ECT1140</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>

**Note:** Students that cannot demonstrate academic readiness will be registered to take additional coursework. There is no additional charge for any academic readiness coursework. Please refer to the **Academic Advising and Readiness** section for more information



## HVAC TECHNICIAN

Diploma Program

36 Weeks – 720 Hours – 54 Quarter Credit Hours

Update – Program Outline on Page 50-51 – Effective for all starts after November 2021

**PROGRAM DESCRIPTION:** The HVAC Technician program is designed to prepare students for entry-level jobs installing, maintaining and repairing heating, ventilating, and air-conditioning (HVAC) equipment in residential and commercial buildings. The program is designed for learners to acquire the specialized knowledge and skills required to successfully perform on the job including: complying with workplace and environmental safety requirements; applying the basic principles of refrigeration and heat transfer to the installation and repair of heating and cooling systems; interpreting plans and drawings correctly; using proper techniques to install piping, ductwork, and equipment when completing a given task; using hand and power tools, test equipment, and refrigerant-handling equipment correctly when servicing HVAC equipment; and demonstrating professional behavior and clear communication skill at all times in the workplace.

**OBJECTIVES:** The ultimate objective of the HVAC Technician program is to prepare graduates for entry-level employment with mechanical contractors, air-conditioning service and installation companies or other businesses that require employees to have specialized training to install, maintain, and or repair HVAC equipment in residential and commercial buildings. Some typical positions for graduates of this program include: HVAC Installer, HVAC Technician, Facilities Maintenance Technician, Building Maintenance Technician, Building Engineer, and Assistant Building Engineer.

**PROGRAM OUTCOMES:** The HVAC Technician program provides the student with the theory and hands-on applications required to perform the following tasks:

- Demonstrate OSHA safety compliance on the job site
- Comply with all regulatory requirements regarding the handling of refrigerants and other hazardous materials in preparation for EPA Universal Certification
- Determine the appropriate basic hand and power tools for a specific task
- Conduct themselves professionally in a work situation through the consistent use of appropriate soft skills such as interpersonal communications, problem solving and time management
- Measure system-operating values (e.g. temperature, pressure, voltage, etc.) safely using the appropriate test equipment
- Manage HVAC/R equipment in an appropriate manner given a maintenance, installation or repair situation
- Demonstrate consistent professional communication within the workplace

Course	Course Title	Lecture Hours	Lab Hours	Other Hours (Externship)	Total Contact Hours	Quarter Credit Hours
<b>Introductory Prerequisite Course</b>						
BST1000	Basic Construction Safety	55	25	0	80	6.0
<b>Core Courses</b>						
ACR1111	HVAC/R Craft Skills	55	25	0	80	6.0
ACR1120	Basic Air Conditioning	55	25	0	80	6.0
ACR1130	Electricity for HVAC/R Technicians	55	25	0	80	6.0
ACR1140	HVAC/R System Service and Maintenance	55	25	0	80	6.0
ACR1211	Basic Heating Systems	55	25	0	80	6.0
ACR1221	Advanced HVAC Systems	55	25	0	80	6.0
ACR1230	Air Distribution	55	25	0	80	6.0
ACR1240	Energy Conservation Methods	55	25	0	80	6.0
<b>PROGRAM TOTALS</b>		<b>495</b>	<b>225</b>	<b>0</b>	<b>720</b>	<b>54.0</b>

## COURSE DESCRIPTIONS

<p><b>BST 1000 – Basic Construction</b></p> <p>This course introduces students to the construction field. The course of instruction will cover basic job safety concepts and regulatory requirements, basic math used in the construction trades, the use of common hand and power tools, and an introduction to blueprint reading. Out-of-class activities will be assigned and assessed as part of this module. Prerequisites: None</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ACR 1111 – HVAC/R Craft Skills</b></p> <p>Air-conditioning and Refrigeration technicians use specialized skills to install, repair, and maintain heating and cooling systems. This course provides the opportunity for students to learn the basic skills used in the craft for installing copper, plastic, and steel piping, reading HVAC drawings and schematics, and selecting the correct hardware and fasteners for an installation. Prerequisite: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ACR 1120 – Basic Air Conditioning</b></p> <p>The basic principle behind air-conditioning is to move heat from inside a building to the outside leaving the interior space cooler. This course introduces the fundamental concepts and technology at the core of every air-conditioning system. Topics include a survey of the basic types of air-conditioning equipment, a thorough study of the heat transfer process, the refrigeration cycle, components of an air-conditioning system, and modern refrigerants. This course also includes the basics of the manifold gauge set and thermometry. Prerequisite: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ACR 1130 – Electricity for HVAC/R Technician</b></p> <p>The machinery used to provide heating, cooling, and refrigeration uses electric motors to turn fans, blowers, and compressors and has complex electrical control systems. Many of the problems encountered by HVAC/R technicians involve electrical systems, so technicians must have a thorough knowledge of electricity to work on the equipment. This course covers basic electrical theory and calculations, using electrical meters, reading schematic diagrams, and basic controls used on HVAC/R systems. Prerequisite: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ACR 1140 - HVAC/R System service and Maintenance</b></p> <p>Most HVAC/R Technicians not only install new systems but also maintain and repair existing ones. This course provides students the opportunity to learn the proper procedures for removing and installing refrigerant in cooling systems, finding leaks, and performing basic maintenance functions. Additional topics include a review of EPA608 certification requirements for handling refrigerant and techniques for ensuring excellent customer service. Prerequisites: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ACR 1211 – Basic Heating Systems</b></p> <p>The installation and maintenance of heating systems requires special care because flame and combustible fuels are involved. This makes the potential for fire or explosion a real threat. This course reviews principles of heat transfer, combustion and the typical fuels and equipment used to heat homes and businesses. These include gas furnaces, electric heating, and heat pumps. Prerequisites: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55, Lab Hours: 25 Outside Hours: 20</p>
<p><b>ACR 1221 – Advanced HVAC Systems</b></p> <p>There are more efficient ways to heat and cool homes and businesses other than just burning fossil fuels. This course explores some of them. This course covers the installation, operation and maintenance of heat pumps, and surveys alternative heating and cooling systems. These systems include solar heating, pellet stoves, evaporative coolers, spot cooling, and computer room units. This course also covers basic hydronic systems and indoor air quality and systems. Prerequisites: ACR1111, ACR1120, ACR1130, ACR1140</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ACR 1230 – Air Distribution</b></p> <p>The overall performance of an HVAC system is closely linked to the quality of the air distribution system used to move air to and from the A/C unit. This course prepares students for jobs installing and maintaining the ductwork and air-handling units in residential and commercial buildings. This course covers the installation requirements for various types of ductwork including basic techniques used to fabricate ductwork on the job. Additional course topics include commercial airside units; variable air volume (VAV and variable volume, variable temperature (VVT) systems; and maintaining air quality within buildings. Prerequisites: ACR1111, ACR1120, ACR1130, ACR1140</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ACR 1240 Energy – Conservation Methods</b></p> <p>This course reviews the various strategies used in the design of energy efficient heating and cooling systems that include calculating heating and cooling loads, laying out and sizing ductwork, and equipment selection. Prerequisites: ACR1111, ACR1120, ACR1130, ACR1140</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>

**Note:** Students that cannot demonstrate academic readiness will be registered to take additional coursework. There is no additional charge any academic readiness coursework. Please refer to the **Academic Advising and Readiness** section for more information



## INDUSTRIAL ELECTRICAL TECHNICIAN

*Diploma Program*

36 Weeks – 720 Hours – 54 Quarter Credit Hours

*Update – Program Outline on Page 52-53 – Effective for all starts after November 2021*

**PROGRAM DESCRIPTION:** The Industrial Electrical Technician program is designed to prepare students for entry-level jobs installing, maintaining, or modifying electrical systems in industrial applications. The program is designed for learners to acquire the specialized knowledge and skills required to successfully perform on the job including: complying with workplace safety requirements; applying electrical theory in the design, installation, and repair of circuits and devices; interpreting plans and drawings correctly; applying National Electrical Code standards to the installation of raceways, conductors, devices, and other utilization equipment; selecting appropriate materials for a given installation; and using tools and equipment properly to complete a given task..

**OBJECTIVES:** The ultimate objective of the Industrial Electrical Technician program is to prepare graduates for entry-level employment with electrical contractors, manufacturers, municipal utilities or other businesses that require employees to have specialized training to install, maintain, and/or repair electrical systems in industrial settings or similar facilities. Some typical positions for graduates of this program include: Apprentice Electrician, Electrician Helper, Electrical Installer, Industrial Maintenance Electrician, Instrument Installer, and Facilities Maintenance Technician

**PROGRAM OUTCOMES:** The Industrial Electrical Technician program provides the student with the theory and hands-on applications required to perform the following tasks:

- Calculate the correct expected values of voltage, current, resistance, impedance, and power in electrical circuits
- Measure electrical values safely using the appropriate test equipment
- Demonstrate OSHA safety compliance on the job site
- Determine the appropriate basic hand and power tools for a specific task
- Use the appropriate basic hand and power tools correctly on a job site
- Determine the minimum National Electrical Code compliance requirements for a specific electrical installation
- Interpret electrical drawings that show the size, quantity and locations of boxes, devices and fixtures accurately for a job
- Install a complete electrical system proficiently for a specific job
- Install basic control circuits correctly on a job
- Demonstrate consistent professional communication within the workplace

Course	Course Title	Lecture Hours	Lab Hours	Other Hours (Externship)	Total Contact Hours	Quarter Credit Hours
<b>Introductory Prerequisite Course</b>						
BST1000	Basic Construction Safety	55	25	0	80	6.0
<b>Core Courses</b>						
ECT1110	Electrical Theory	55	25	0	80	6.0
ECT1120	Electrical Craft Skills	55	25	0	80	6.0
ECT1130	Residential Wiring	55	25	0	80	6.0
ECT1140	Residential and Commercial Lighting	55	25	0	80	6.0
ECT1210	Electric Motors	55	25	0	80	6.0
IET 1220	Industrial Control Systems	55	25	0	80	6.0
IET 1230	Basic PLC Operations and Maintenance	55	25	0	80	6.0
IET 1240	Process Control and Automated Systems	55	25	0	80	6.0
<b>PROGRAM TOTALS</b>		<b>495</b>	<b>225</b>	<b>0</b>	<b>720</b>	<b>54.0</b>

## COURSE DESCRIPTIONS

<p><b>BST 1000 – Basic Construction</b></p> <p>This course introduces students to the construction field. The course of instruction will cover basic job safety concepts and regulatory requirements, basic math used in the construction trades, the use of common hand and power tools, and an introduction to blueprint reading. Out-of-class activities will be assigned and assessed as part of this module. Prerequisites: None</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1110 – Electrical Theory</b></p> <p>Electricity makes the modern world possible by providing the power needed for lighting, air-conditioning, communications, and computers, yet how it works is a mystery to most. This course provides a basic understanding of how electrical energy is used to produce useful work, how it is measured and tested, and the calculations required for analyzing electrical circuits. Topics of study include direct-current (DC) and alternating-current (AC) systems, transformer operation, electrical test equipment, and fitting, conductors and cables. Prerequisite: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1120 – Electrical Craft Skills</b></p> <p>Electricians use specialized skills to install and repair electrical systems in homes and businesses. This course is designed for students to learn the basic skills needed in the electrical craft that include reading and comprehending electrical drawings, wiring diagrams and schematics, procedures for installing electrical conduit, boxes, wiring, and determining minimum installation requirements of the National Electrical Code, hand bending and mechanical bending of various conduit sizes and materials. Prerequisite: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1130 – Residential Wiring</b></p> <p>One of the more common jobs for an electrician is the installation or repair of the electrical system in a dwelling. This course familiarizes the student with the materials and methods used for installing a complete 120V electrical system for a typical residence. Students will learn and practice techniques for installing non-metallic sheathed cables, device boxes, receptacles, switches, lighting fixtures, circuit breaker panels, and service entrance equipment. Prerequisite: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1140 – Residential and Commercial Lighting</b></p> <p>Electrical lighting is essential in residential, commercial and industrial settings. This course prepares students to understand the basic fundamentals of lighting, successfully install residential and commercial lighting, and properly identify commonly used materials in commercial and industrial facilities. Prerequisites: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>ECT 1210 – Electrical Motors</b></p> <p>One of the main uses for electricity is to make something move and this is what electric motors are used for. Motors are unique in that the amount of electrical current required to operate them changes with the load that is placed on the motor. This course explores the basic construction, operation, and maintenance of various direct-current (DC) motors, single-phase and three-phase alternating-current (AC) motors, and the minimum National Electrical Code requirements for circuits supplying motors. Students also learn to install basic control circuits to stop, start, and reverse motors. Prerequisites: BST1000</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>IET 1220 – Industrial Control Systems</b></p> <p>Industrial electricians install and maintain the wide array of sensors, switches, and components needed to keep machines and process equipment running properly. This course is designed to familiarize students with the operation and maintenance of industrial control devices including hydraulic, pneumatic, and motor-operated valves. Students learn to interpret electrical and instrumentation diagrams for troubleshooting circuits. Prerequisites: ECT1110, ECT1120, ECT1130, ECT1140</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>IET 1230 – Basic PLCs Operations and Maintenance</b></p> <p>State-of-the-art production equipment is electronically controlled through highly-specialized computers called programmable logic controllers (PLC). Industrial electricians routinely install, maintain, and troubleshoot PLC circuits and must be familiar with their operation. This course provides students with the opportunity to install basic PLC hardware, input-output wiring, writing basic control programs, and uploading programs to test on a PLC. Additional topics include requirements for industrial network wiring and distributed control systems. Prerequisites: ECT1110, ECT1120, ECT1130, ECT1140</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>
<p><b>IET 1240 - Process Control and Automated Systems</b></p> <p>Modern industrial facilities require accurate data from electronic sensors and associated equipment to maintain safe and efficient operation. This course introduces basic concepts related to process control and measurement related to temperature, flow, and pressure. Students learn basic techniques to install sensors and control devices, cables and wiring, and proper wire terminations. Additional topics include proportional, integral, and derivative (PID) control loops, and loop tuning. Prerequisites: ECT1110, ECT1120, ECT1130, ECT1140</p>	<p><b>6.0 Quarter Credit Hours</b></p> <p>Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20</p>

**Note:** Students that cannot demonstrate academic readiness will be registered to take additional coursework. There is no additional charge any academic readiness coursework. Please refer to the **Academic Advising and Readiness** section for more information



## REFRIGERATION TECHNICIAN

*Diploma Program*

36 Weeks – 720 Hours – 54 Quarter Credit Hours

*Update – Program Outline on Page 67-68 – Effective for all starts after November 2021*

**PROGRAM DESCRIPTION:** The Refrigeration Technician program is designed to prepare students for entry-level jobs installing, maintaining and repairing heating, ventilating, air-conditioning, and refrigeration (HVAC/R) equipment in commercial and industrial settings. The program is designed for learners to acquire the specialized knowledge and skills required to successfully perform on the job including: complying with workplace and environmental safety requirements; applying the basic principles of refrigeration and heat transfer to the installation and repair of heating and cooling systems; interpreting plans and drawings correctly; using proper techniques to install piping, ductwork, and equipment when completing a given task; using hand and power tools, test equipment, and refrigerant-handling equipment correctly when servicing HVAC/R equipment; and demonstrating professional behavior and clear communication skill at all times in the workplace.

**OBJECTIVES:** The ultimate objective of the Refrigeration Technician program is to prepare graduates for entry-level employment with mechanical contractors, refrigeration service and installation companies or other businesses that require employees to have specialized training to install, maintain, and or repair commercial refrigeration equipment. Some typical positions for graduates of this program include: Refrigeration Support Technician, Refrigeration Mechanic, Refrigeration Mechanic Apprentices, Facilities Maintenance Technician, Building Maintenance Technician, Building Engineer, and Assistant Building Engineer.

**PROGRAM OUTCOMES:** The Refrigeration Technician program provides the student with the theory and hands-on applications required to perform the following tasks:

- Demonstrate OSHA safety compliance on the job site
- Comply with all regulatory requirements regarding the handling of refrigerants and other hazardous materials in preparation for EPA Universal Certification.
- Determine the appropriate basic hand and power tools for a specific task.
- Conduct themselves professionally in a work situation through the consistent use of appropriate soft skills such as interpersonal communications, problem solving and time management.
- Measure system-operating values (e.g. temperature, pressure, voltage, etc.) safely using the appropriate test equipment.
- Manage HVAC/R equipment in an appropriate manner given a maintenance, installation or repair situation.
- Demonstrate consistent professional communication within the workplace

Course	Course Title	Lecture Hours	Lab Hours	Other Hours (Externship)	Total Contact Hours	Quarter Credit Hours
<b>Introductory Prerequisite Course</b>						
BST1000	Basic Construction Safety	55	25	0	80	6.0
<b>Core Courses</b>						
ACR1111	HVAC/R Craft Skills	55	25	0	80	6.0
ACR1120	Basic Air Conditioning	55	25	0	80	6.0
ACR1130	Electricity for HVAC/R Technicians	55	25	0	80	6.0
ACR1140	HVAC/R System Service and Maintenance	55	25	0	80	6.0
ACR1211	Basic Heating Systems	55	25	0	80	6.0
RFT1220	Commercial Hydronic Systems	55	25	0	80	6.0
RFT1230	Refrigeration Systems	55	25	0	80	6.0
RFT1240	Defrost Fundamentals and Control Troubleshooting	55	25	0	80	6.0
<b>PROGRAM TOTALS</b>		<b>495</b>	<b>225</b>	<b>0</b>	<b>720</b>	<b>54.0</b>

**Note:** Students that cannot demonstrate academic readiness will be registered to take additional coursework. There is no additional charge any academic readiness coursework. Please refer to the **Academic Advising and Readiness** section for more information

**COURSE DESCRIPTIONS**

<b>BST 1000 – Basic Construction</b> This course introduces students to the construction field. The course of instruction will cover basic job safety concepts and regulatory requirements, basic math used in the construction trades, the use of common hand and power tools, and an introduction to blueprint reading. Out-of-class activities will be assigned and assessed as part of this module. Prerequisites: None Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20	<b>6.0 Quarter Credit Hours</b>
<b>ACR 1111 – HVAC/R Craft Skills</b> Air-conditioning and Refrigeration technicians use specialized skills to install, repair, and maintain heating and cooling systems. This course provides the opportunity for students to learn the basic skills used in the craft for installing copper, plastic, and steel piping, reading HVAC drawings and schematics, and selecting the correct hardware and fasteners for an installation. Prerequisite: BST1000 Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20	<b>6.0 Quarter Credit Hours</b>
<b>ACR 1120 – Basic Air Conditioning</b> The basic principle behind air-conditioning is to move heat from inside a building to the outside leaving the interior space cooler. This course introduces the fundamental concepts and technology at the core of every air-conditioning system. Topics include a survey of the basic types of air-conditioning equipment, a thorough study of the heat transfer process, the refrigeration cycle, components of an air-conditioning system, and modern refrigerants. This course also includes the basics of the manifold gauge set and thermometry. Prerequisite: BST1000 Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20	<b>6.0 Quarter Credit Hours</b>
<b>ACR 1130 – Electricity for HVAC/R Technician</b> The machinery used to provide heating, cooling, and refrigeration uses electric motors to turn fans, blowers, and compressors and has complex electrical control systems. Many of the problems encountered by HVAC/R technicians involve electrical systems, so technicians must have a thorough knowledge of electricity to work on the equipment. This course covers basic electrical theory and calculations, using electrical meters, reading schematic diagrams, and basic controls used on HVAC/R systems. Prerequisite: BST1000 Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20	<b>6.0 Quarter Credit Hours</b>
<b>ACR 1140 - HVAC/R System service and Maintenance</b> Most HVAC/R Technicians not only install new systems but also maintain and repair existing ones. This course provides students the opportunity to learn the proper procedures for removing and installing refrigerant in cooling systems, finding leaks, and performing basic maintenance functions. Additional topics include a review of EPA608 certification requirements for handling refrigerant and techniques for ensuring excellent customer service. Prerequisites: BST1000 Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20	<b>6.0 Quarter Credit Hours</b>
<b>ACR 1211 – Basic Heating Systems</b> The installation and maintenance of heating systems requires special care because flame and combustible fuels are involved. This makes the potential for fire or explosion a real threat. This course reviews principles of heat transfer, combustion and the typical fuels and equipment used to heat homes and businesses. These include gas furnaces, electric heating, and heat pumps. Prerequisites: BST1000 Lecture Hours: 55, Lab Hours: 25 Outside Hours: 20	<b>6.0 Quarter Credit Hours</b>
<b>RFT 1220 Commercial Hydronic Systems</b> Water, in both its liquid and gaseous states, is frequently used as a medium of heat exchange especially for large- scale heating and cooling systems. Examples of these types of hydronic systems include chilled water, hot water, and steam systems. This course covers the basic principles of hydronic technology including the physical properties of water and steam; a survey of equipment used in chilled water systems and boilers; basic controls for hydronic systems; water and steam piping arrangements; system maintenance; and procedures for system start-up and shut-down. Prerequisites: ACR1111, ACR1120, ACR1130, ACR1140 Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20	<b>6.0 Quarter Credit Hours</b>
<b>RFT 1230 Refrigeration Systems</b> Refrigeration equipment is widely used in commercial and retail applications for preserving food quality before consumption in restaurants and other similar establishments; displays cases in grocery and retail food stores; and ice machines. This course covers the basic concepts related to refrigeration in commercial and retail applications including medium and low-temperature systems; commercial refrigeration equipment installation and maintenance; ice machine troubleshooting and maintenance; ammonia refrigeration system components; defrosting equipment and methods; and related control systems. Prerequisites: ACR1111, ACR1120, ACR1130, ACR1140 Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20	<b>6.0 Quarter Credit Hours</b>
<b>RFT 1240 Defrost Fundamentals and Controls Troubleshooting</b> Refrigeration systems rely on a variety of control devices to maintain proper operation and improve system efficiency. This course covers fundamentals of the defrost cycle, the selection, operation, and maintenance of the typical control components and accessories used in commercial refrigeration systems. Subject matter includes digital control systems, electrical switching devices, relays, and contactors; mechanical accessories such as filters, driers, and separators; compressor motors and protective devices; and strategies and techniques for identifying and correcting faults within the refrigeration system. Prerequisites: ACR1111, ACR1120, ACR1130, ACR1140 Lecture Hours: 55 Lab Hours: 25 Outside Hours: 20	<b>6.0 Quarter Credit Hours</b>

