COLLEGE OF TECHNOLOGY

Johnson COLLEGE

# 2025 – 2026 Catalog

www.johnson.edu

3427 NORTH MAIN AVENUE • SCRANTON • PA 18508
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# About This Catalog

This catalog is a primary reference source for students, faculty, staff, and the community and will answer many, if not all, questions regarding Johnson College.

Johnson College reserves the right, in its sole judgment, to make changes of any nature in its programs, calendar, or academic schedule whenever it is deemed necessary or desirable. Changes may include course content, scheduling of classes, and canceling of classes and other academic activities. The College will make every effort to provide students with timely notification of such changes.

This catalog does not establish a contractual relationship but summarizes current information regarding the calendar, admissions, degree requirements, fees, regulations, and course offerings. The information contained in this catalog is correct at the time of printing. Changes in policy, requirements, and regulations may occur during the year.

# Student Responsibilities

Johnson College students are responsible for reading and abiding by all rules and policies described in this catalog, individual program area handbooks, and the Student Handbook which includes the Community Code of Ethics. Students are personally responsible for following policies and procedures as they affect their academic progress, financial obligations, relationships with College authorities, and eligibility for graduation.

Date of Publication - July 2025
O. S. Johnson Technical Institute t/a Johnson College

# Accreditation

Johnson College is accredited by the Middle States Commission on Higher Education (MSCHE).

1007 North Orange Street
4th Floor MB #166
Wilmington, DE 19801
Email: info@msche.org
Website: www.msche.org
Spanish: espanolinfo@msche.org

The Automotive Technology Program is accredited by the National Automotive Technicians Education Foundation, Inc. (NATEF).

101 Blue Seal Drive
S.E. Suite 101
Leesburg, VA 20175
Phone: 703-669-6650
Email: webmaster@natef.org
Website: www.natef.org

The Physical Therapist Assistant Program is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE).

1111 North Fairfax Street
Alexandria, Virginia 22314
Phone: 703-706-3245
Email: accreditation@apta.org
Website: www.capteonline.org

The Radiologic Technology Program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT).

20 North Wacker Drive
Suite 2850
Chicago, IL 60606-3182
Phone: 312-704-5300
E-mail: mail@jrcert.org
Website: www.jrcert.org

The Veterinary Nursing Program is accredited by the American Veterinary Medical Association (AVMA).

1931 North Meacham Road
Suite 100
Schaumburg, IL 60173-4360
Phone: 800-248-2862
Fax: 847.925.1329
Website: www.avma.org

# Curriculum Approval

The Architectural Drafting & Design Technology program has curriculum approval at the Drafter level by the American Design Drafting Association International (ADDA).

105 East Main Street,
Newbern, Tennessee 38059
Telephone: 731-627-0802
Fax: 731-627-9321
Website: www.adda.org

# Institution Participation

Johnson College is approved to participate in the National Council for State Authorization Reciprocity Agreements.

# General College Policies

## Policy for Policies

College policies promote Johnson College's mission, enhance operational efficiency and college governance, and communicate expectations relating to conduct, thereby reducing institutional risk. Johnson College expects faculty, staff, and students to be familiar with and adhere to all applicable policies. In order to promote accessibility to current policies, as well as consistency and clarity of content, this policy establishes a framework, common format, roles and responsibilities and process for adoption, review, revision and dissemination of all policies as defined in this policy.

## Non-Discrimination Policy

Johnson College does not discriminate with regard to race, color, creed, age, national or ethnic origin, religion, disability, sex, sexual orientation, gender, gender identity and expression, including a transgender identity, genetics, veteran status, or ancestry in the administration of its educational and admission policies, scholarship, loan, athletic and other school administered programs, or employment practices in accordance with Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, the Americans with Disabilities Act of 1990, or any other legally protected category. For information regarding civil rights and grievance procedures, contact the Title IX Coordinator of Johnson College, 3427 North Main Avenue, Scranton, PA 18508; (570) 702-8944.

## Felony and Probation Policy

Johnson College is required to inform students that a prior felony conviction may affect their ability to complete the requirements of certain academic programs, meet licensure requirements for specific professions, and secure employment in those fields. However, once this information is provided, students are not prohibited from pursuing a particular course of study.

## Pregnancy Policy

Students have the option to inform their program director about a pregnancy. However, if a student chooses not to disclose this information, no accommodations can be made concerning their internship assignment or program of study. Students who choose to disclose their pregnancy should contact their program director.

# 2025-2026 ACADEMIC CALENDAR

| Fall 2025 | | |
|---|---|---|
| Aug. 18 | Faculty return | Monday |
| Aug. 25 | Fall 2025 term begins | Monday |
| Sept. 1 | Labor Day (College closed) | Monday |
| Sept. 8 | Deadline to resolve “I” grades | Monday |
| Sept. 8 | Last day to add or drop courses | Monday |
| Sept. 9 | Never Attend/Administrative withdrawal | Tuesday |
| Oct. 6-10 | Midterm week | Monday-Friday |
| Oct. 13 | Fall Break (College closed) | Monday |
| Oct. 14 | Midterm grades due | Tuesday |
| Oct. 14-24 | Advising Period | Tuesday-Friday |
| Oct. 15 | Career Fair | Wednesday |
| Oct. 24 | Deadline to submit Stop Attend Form | Friday |
| Oct. 27 | Priority registration begins | Monday |
| Oct. 28 | Scholarship Breakfast (classes begin at 11:00 AM) | Tuesday |
| Nov. 1 | Open House | Saturday |
| Nov. 2 | Last day to withdraw from courses | Sunday |
| Nov. 2 | Deadline for College withdrawal | Sunday |
| Nov. 3-7 | Second-year student registration begins | Monday-Friday |
| Nov. 10 | First-year student registration begins | Monday |
| Nov. 11 | Veterans Day (College closed) | Tuesday |
| Nov. 27-28 | Thanksgiving Break (College closed) | Thursday-Friday |
| Dec. 1-5 | Finals week | Monday-Friday |
| Dec. 7 | Fall 2025 term ends | Sunday |
| Dec. 9 | Final grades due | Tuesday |

| Intersession 2025 | | |
|---|---|---|
| Dec. 7 | Intersession 2025 term begins | Sunday |
| Dec. 14 | Last day to add or drop courses | Sunday |
| Dec. 14 | Deadline for College withdrawal | Sunday |
| Dec. 15 | Never Attend/Administrative withdrawal | Monday |
| Jan. 11 | Intersession 2025 term ends | Sunday |
| Jan. 13 | Final grades due | Tuesday |

| Spring 2026 | | |
|---|---|---|
| Jan. 12 | Spring 2026 term begins | Monday |
| Jan. 19 | Martin Luther King Jr. Day (College closed) | Monday |
| Jan. 26 | Deadline to resolve “I” grades | Monday |
| Jan. 26 | Last day to add or drop courses | Monday |
| Jan. 27 | Never Attend/Administrative withdrawal | Tuesday |
| Feb. 16 | Presidents Day (College closed) | Monday |
| Mar. 2-6 | Midterm week | Monday-Friday |
| Mar. 9-13 | Spring Break (no classes) | Monday-Friday |
| Mar. 16 | Midterm grades due | Monday |
| Mar. 16-27 | Advising Period | Monday-Friday |
| Mar. 18 | Career Fair | Wednesday |
| Mar. 20 | Deadline to submit Stop Attend form | Friday |
| Mar. 28 | Open House | Saturday |
| Mar. 29 | Last day to withdraw from courses | Sunday |
| Mar. 29 | Deadline for College withdrawal | Sunday |
| Mar. 30-Apr. 3 | Priority & second-year student registration beings | Monday-Friday |
| Apr. 3-6 | Break (College closed) | Friday-Monday |
| Apr. 7 | First-year student registration begins | Tuesday |
| Apr. 27-May 1 | Finals week | Monday-Friday |
| May 3 | Spring 2026 term ends | Sunday |
| May 5 | Final grades due | Tuesday |
| May 8 | Commencement rehearsal | Friday |
| May 9 | Commencement | Saturday |

| Summer 2026 | | |
|---|---|---|
| May 11 | Summer 2026 term beings | Monday |
| May 11 | Summer I session begins | Monday |
| May 17 | Last day to add or drop courses for Summer I | Sunday |
| May 18 | Never Attend/Administrative withdrawal for Summer I | Monday |
| May 25 | Memorial Day (College closed) | Monday |
| Jun. 14 | Summer I session ends | Sunday |
| Jun. 16 | Final grades for Summer I due | Tuesday |
| Jun. 19 | Juneteenth (College closed) | Friday |
| Jun. 22 | Summer II session begins | Monday |
| Jun. 28 | Last day to add or drop courses for Summer II | Sunday |
| Jun. 28 | Deadline for College withdrawal for Summer term | Sunday |
| Jun. 29 | Never Attend/Administrative withdrawal for Summer II | Monday |
| Jul. 3 | Independence Day observed (College closed) | Friday |
| Jul. 15 | Open House | Wednesday |
| Jul. 26 | Summer II session ends | Sunday |
| Jul. 26 | Summer 2026 term ends | Sunday |
| Jul. 28 | Final grades for Summer II due | Tuesday |

# INSTITUTIONAL OVERVIEW

Johnson College is a vital resource for career and technical education in Northeastern Pennsylvania. The College was founded by Orlando S. Johnson, a wealthy coal baron from Scranton who left the bulk of his estate to form a trade school for secondary-level students, teaching them “useful arts and trades that may enable them to make an honorable living and become contributing members of society." In 1964, the school transitioned to a post-secondary institution offering certificates. Throughout the century, new buildings were constructed, and degree programs added.

Today, Johnson College offers associate degree programs, academic certificates, and numerous job training opportunities. The Workforce Advancement and Value-Added Education (WAVE) department offers non-credit training programs to upskill the local workforce in areas of machining, carpentry, drafting, and automotive repair. The College also supports the area’s youth by offering STEM training through summer camps, after-school activities, and other special events. The College honors multiple articulation agreements with post-secondary institutions and dual enrollment agreements with multiple secondary schools. The College also participates in the Pennsylvania Department of Education’s Students Occupationally and Academically Ready (SOAR) Program of Study (POS) educational plan that aligns secondary career and technical programs to a post-secondary credential or associate degree. The College’s faculty and staff are dedicated individuals who support the student experience, either through teaching or through educational support services and administration.

Johnson College is an accredited institution and a member of the Middle States Commission on Higher Education (MSCHE), 1007 North Orange Street, 4th Floor, MB #166, Wilmington, DE 19801 or www.msche.org. Johnson College’s accreditation status is Accreditation Granted. MSCHE is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation (CHEA).

Several Johnson College programs maintain additional accreditation through agencies such as the American Design Drafting Association International, the Commission on Accreditation in Physical Therapy Education, the Joint Review Committee on Education in Radiologic Technology, the American Veterinary Medical Association, and the National Automotive Technicians Education Foundation.

## Mission Statement

Johnson College provides industry-focused, hands-on learning in a supportive environment and prepares graduates to enter into and advance in their careers.

## Vision Statement

To make the world our campus through industry partnerships and experiential learning by teaching the students of today the skills of tomorrow.

## Institutional Goals

1. Foster a culture of innovative instructional practices to enhance students’ academic performance.
2. Promote an inclusive environment to expand and support a diversified population.
3. Integrate student support systems in a meaningful way to foster success.
4. Enhance industry and community relationships for the mutual benefit of students and the marketplace.
5. Optimize resources to reflect our continued commitment to responsible growth.

## Shared Values

**Forward-thinking:** We strive to be the leaders of change. We anticipate hurdles, innovate, and make incremental improvements by embracing an innovative and proactive attitude.

**Equity:** We adopt an equity framework that proactively seeks to make Johnson College accessible, affordable, and inclusive for all people.

**Student-centered:** The best interest of our students is a central consideration in all we do.

**Collaboration:** We interact with dignity and respect for those with whom we work, inside and outside the College, to ensure productive and quality partnerships.

**Advancement:** We have the courage and curiosity to challenge the status quo, innovate and take calculated risks. We find new ways to move forward which translates into growth for our students, our campus, and our community.

*The institutional goals and shared values of our organization are those on which we build the foundation, perform work, and conduct ourselves.*

## Carl D. Perkins Vocational and Applied Technology Act

The Perkins Grant program is a federal grant that enables Johnson College to provide support services to students who qualify within the program's guidelines. The program includes a comprehensive system of supporting students attending Johnson College Programs.

Any action taken by Johnson College in implementing the Perkins Grant program may be appealed by current students, parents of current students, teachers employed by Johnson College, or local area residents, in writing, to the Director of the Perkins Grant at the address listed below. The appeal must be received in the office of the Director of the Perkins Grant within ninety (90) calendar days from the date the action is taken or announced, whichever occurs first.

The Director of the Perkins Grant will present the written appeal to the Perkins Committee of Johnson College at a session convened within fourteen (14) calendar days from the receipt of the appeal. The Perkins Committee will review the appeal and determine if further action is necessary. The Committee will notify the person(s) in writing within ten (10) calendar days of the Committee's decision.

If the Committee's decision is adverse to the person(s) filing the appeal, the written appeal will be presented to the full Perkins Advisory Board at its next regularly scheduled session. The Board will vote on the action to be taken. A majority of the full Advisory Board will be necessary to reverse the decision recommended by the Executive Committee.

The Director of the Perkins Grant will notify the person(s) of the full Advisory Board's decision in writing within ten (10) calendar days. The next level of appeal is the Commissioner of Post-Secondary Education, Bureau of Post-Secondary Services, Division of Program Services, Pennsylvania Department of Education, 333 Market Street, Harrisburg, PA 17126-0333.

A copy of this procedure will be provided to faculty and staff.

Petitions may be sent to:

Director of the Perkins Grant
Johnson College
3427 North Main Ave
Scranton, PA 18508

Johnson College is an Equal Opportunity / Affirmative Action College.

## Educational Plan

Students attend Johnson College to prepare for entry-level technician roles in industry and the professional community. To achieve this goal, students pursuing an associate degree complete over 40 credits of major-specific coursework and more than 20 credits of core career coursework. The student-faculty ratio is 8:1.

Faculty members bring a blend of professional education and practical experience to each program. They take a personal interest in the progress of every student, and provide encouragement and support to help them reach their full potential.

The physical facilities include modern classrooms, occupational spaces, and laboratories, all equipped with the tools, machines, equipment, and materials necessary to support a well-rounded educational program. The equipment used in each program reflects what is found in the industry and is selected to provide students with a comprehensive learning experience. This includes hand and power tools, specialized testing and repair equipment, industrial units, and clinical devices. Our academic programs further enhance this experience by requiring students to engage in experiential learning opportunities at off-campus locations.

Learning opportunities are enhanced by the college's Resource Center, which is regularly updated with books, periodicals, and brochures, and offers high-speed internet access to students. The Resource Center facilitates access to information from various external services and is a member of the Northeast Pennsylvania Library Consortium. Additionally, the college maintains strong connections with institutional and industrial libraries, providing further reference materials. Learning is also enriched through educational videos, field trips, and presentations by business and industry professionals.

Careers in technology are continually evolving due to advancements in products, materials, tools, machinery, equipment, methods, and techniques. To ensure College programs stay up-to-date, Program Advisory Committees, made up of representatives from business and industry, meet regularly with faculty and administration to provide recommendations on course content and program curricula.

## Degrees Awarded

Johnson College is approved by the Pennsylvania Department of Education and the State Board of Education to award two degrees, the Associate in Science (A.S.) degree and the Associate in Applied Science (A.A.S.) degree. All programs of study prepare graduates for entry-level positions in their field of study.

The Associate in Science (A.S.) degree is awarded to students who graduate from the following programs:

Computer Information Technology
Physical Therapist Assistant
Radiologic Technology
Veterinary Nursing

The Associate in Applied Science (A.A.S.) degree is awarded to students who graduate from the following programs:

Advanced Manufacturing Technology (not accepting new students)
Architectural Drafting & Design Technology
Automotive Technology
Aviation Technology
Biomedical Equipment Technology
Carpentry & Cabinetmaking Technology
Civil Design Technology (not accepting new students)
Diesel Truck Technology
Electrical Construction Technology

Electronic Engineering Technology
Heating, Ventilation, & Air Conditioning Technology
Mechatronics Technology
Welding Fabrication & Manufacturing Technology

## Academic Certificates Awarded

The Certificate is awarded to students who graduate from the following programs:

Building and Property Maintenance Technology
Cybersecurity Analytics & Operations
Diesel Preventative Maintenance Technology
Industrial Technology
Welding Technology

## Workforce Advancement & Value-Added Education (WAVE) *formerly Continuing Education*

The WAVE Department at Johnson College embodies the spirit of lifelong learning and career progression. Our mission is to empower individuals and organizations by offering innovative, industry-driven programs tailored to the dynamic tides of today's workforce. With a focus on flexibility, inclusivity, and practical skill-building, WAVE connects learners of all ages to opportunities for personal growth, professional development and economic mobility.

WAVE fosters a vibrant and collaborative environment, ensuring every learner has the tools, skills, and confidence needed to ride the wave of opportunity and achieve excellence in their chosen fields. At WAVE we partner with local industries to ensure our programs meet the current and future workforce demands. We also serve as a hub for community engagement and career advancement through customized training, certifications, and continuing education pathways.

# ENROLLMENT INFORMATION

Johnson College accepts qualified students regardless of race, religion, disability or national origin. Admission to Johnson College is based on an evaluation of the applicant's desire, ability, and potential for success. Applicants will be judged not only on their scholastic achievement and abilities, but also on their intellectual, physical, emotional and behavioral capacities to meet the essential requirements of the school's curriculum. The College reserves the right to deny admission or readmission to any student if, in the opinion of the College authorities, their admission is not in the best interest of the student or the College. At a minimum, applicants must have a high school diploma, or its equivalent.

Applicants are encouraged to arrange for a campus visit and a personal information session with a Recruitment Advisor. Appointments may also be made to meet with appropriate faculty and current students.

## Admission Process for Matriculating Students

A matriculating student is a student who has been formally admitted into a degree or certificate program at Johnson College. The process for admission as a matriculating student is shown below.

1. Complete the application. Students can apply online at www.johnson.edu.

2. Once the online application is submitted, the applicant must have the following items sent to the Enrollment Office:

    - Official High School Transcripts from the last high school attended or General Equivalency Diploma (GED)
    - If applicable, an official copy of Scholastic Aptitude Test (SAT) **or** American College Test (ACT) Scores
    - If applicable, an official transcript from each post-secondary institution attended
    - It is strongly recommended that all applicants provide their Recruitment Advisor with any items they believe will provide them with the best opportunity for acceptance (resume, letters of recommendation, certifications, etc...)

    Note: Admission Requirements for each program area are found on the Enrollment webpage. Health and Animal Science Programs may require additional documentation.

    All documents may be submitted to:
    Johnson College
    ATTN: Enrollment
    3427 North Main Ave.
    Scranton, PA 18508
    enroll@johnson.edu

3. The applicant is encouraged to schedule a campus visit, shadow day, or attend an open house event.

## Criminal Background Check / Drug and Alcohol Screening

All academic programs of study, clinical practicums and internships, as well as potential employers, may require students to complete a criminal background check, child abuse clearance, fingerprinting, and/or drug screening. Johnson College is not responsible for the decisions or actions of other institutions or organizations that may result from a student's failure of a drug screening or background check. Students who fail to report the results of these incidents to the College may be subject to disciplinary action.

The results of a criminal background check will not necessarily preclude admission to Johnson College; however, students may not be able to complete their chosen academic program.

## Non-Matriculation

A non-matriculating (non-degree seeking) student is a student who is taking courses at Johnson College without being formally admitted into a degree or certificate program. Non-matriculating students are limited to a maximum of 9 credits total. Students wishing to obtain more than 9 credits must receive approval from the program director. Enrollment as a non-matriculating student does not imply admission to the college.

Non-matriculating students do not follow admissions requirements and are not required to take placement testing. This status is most suited for students seeking personal enrichment, learning/upgrading job skills, seeking degree requirements for another institution, or enhancing a future application for admission into a program of study. A student wishing to become a matriculating (degree seeking) student must follow the admissions requirements and gain acceptance into a degree/certificate program.

For further information regarding registration for non-matriculating students, please contact the Enrollment Office at enroll@johnson.edu.

## Dual Enrollment

As defined by the Pennsylvania Department of Education, "dual enrollment, referred to as 'concurrent enrollment' in the School Code, is an effort by the Commonwealth to encourage a broader range of students to experience post-secondary coursework and its increased academic rigor, while still in the supportive environment of their local high school. The intent is to increase the number of students that go on to post-secondary education and to decrease the need for remedial coursework at post-secondary institutions."

It is a "locally administered program that allows a secondary student to concurrently enroll in post-secondary courses and to receive college credit for that coursework. The local programs are run through partnerships between school entities and eligible post-secondary institutions." For information about dual enrollment opportunities, please contact the Enrollment Office at enroll@johnson.edu.

## Industry Fast Track

The Industry Fast Track (IFT) program is a joint partnership with area school districts and Johnson College. Industry Fast Track offers high school students an opportunity to enroll simultaneously in secondary and post-secondary coursework at Johnson College. Students will remain enrolled full-time at their high school while attending classes at Johnson College.

The number of Johnson College credits an IFT student can enroll in each academic term is dependent on course availability and the student's term and career GPA at Johnson College.

- At least 2 program (non-general education/core career) courses will be available to IFT students each term (either online or in-person).
- When a student's term and career GPA is 3.0 or better they can register for any number of credits per academic term.
- When a student's term or career GPA is between 2.0 and 2.99, they can register for up to 12 credits the following academic term.
- When a student's term or career GPA is below a 2.0, they are placed on academic probation, can register for up to 6 credits the following academic term, and must earn at least a 3.0 GPA the following academic term to stay in the program.

## SOAR (Students Occupationally and Academically Ready)

SOAR stands for *Students Occupationally and Academically Ready*. SOAR programs articulate skills and tasks gained at the high school level to course credit earned in a post-secondary degree, diploma or certificate program.

SOAR programs can help students:

- Prepare for entering the job market with college and career ready skills
- Choose the best career pathway
- Save money on college tuition
- Save time by not duplicating coursework in college

Qualified SOAR students are eligible to apply for credits up to 16 months after their high school graduation date. **The deadline for an entering student at Johnson College to submit their SOAR paperwork is August 1 for the fall term or December 1 for the spring term.** If SOAR credits are awarded they will be placed on the student transcript with a letter grade of "T".

In order for SOAR credits to be evaluated by the Office of the Registrar, the SOAR Documentation Checklist should be fully completed and sent from the Enrollment Office to the Office of the Registrar. The documents needed to complete the checklist are as follows:

1. Official high school transcript with GPA of 2.75 or higher
2. High school diploma
3. Perkins Statewide Articulation Agreement Cover Sheet
4. Perkins Secondary Competency Task List with the signature of the student's high school technical instructor
5. Pennsylvania Skills Certificate or the Pennsylvania Certificate of Competency earned in the student's technical program

More information can be found at: https://www.pacollegetransfer.com/PASOAR/tabid/4498/Default.aspx

## Pre-Employment Transition Service (PETS) Program

https://johnson.edu/pets/

The PETS program is a paid employment transition opportunity for high school students with an open case with the Office of Vocational Rehabilitation who have a post-secondary goal of employment. PETS allows students to train for potential full-time employment. The training period is flexible based on the student's skill level and career interest in Warehouse Associate positions at the Hazleton Campus.

## Readiness in Skilled Employment (RISE) Program

https://risenepa.org/

RISE helps individuals rise and improve their socioeconomic standing by gaining skills that help them qualify for skilled employment. RISE is a program like no other for individuals seeking a life-changing job opportunity. This workforce development program is available to Pennsylvania's Lackawanna and Luzerne County residents and offers much more than technical training. RISE participants will receive career coaching, assistance with gaining soft skills, and a range of support along the way to ensure academic success and job placement.

Stress, health, and money are just some of the barriers that can impact participation and commitment to earning an education. RISE helps to remove those barriers. This program assists participants with transportation, childcare, housing, technology, and language, to name a few. By providing pathways to earning a family-sustaining wage, RISE helps to break the cycle of poverty and paves the way for future generations to succeed.

## Parent Pathways of NEPA Program

https://parentpathwaysofnepa.org/

Parent Pathways of Northeastern Pennsylvania (NEPA) is a multi-sector collaborative that includes higher education, social and community services, and youth development to help fight poverty. This holistic approach removes barriers for parents so they can advance their education. Parent Pathways of NEPA guides parents out of poverty through access to higher education and family-sustaining professional careers. Families are empowered to learn, thrive, and succeed; two generations at a time. The program drives equitable access to higher education for student parents in a collaborative place where empathy and empowerment meet.

# FINANCIAL INFORMATION

## Tuition, Fees, and Expenses

The following tuition and fees are for the 2025-2026 academic year. The College reviews tuition and fees annually and reserves the right to adjust fees when necessary.

### Application Fee

An application fee is not required.

### Enrollment Deposit

Accepted students must submit an enrollment deposit within 30 days of receipt of an acceptance letter. This deposit is required prior to registration and is non-refundable.

### Tuition

Tuition for full-time attendance (12 to 20 credits per term, 24 to 40 credits per academic year) for the 2025-2026 academic year is $19,400. The per credit tuition rate of $585 will be assessed for each approved credit over 20 per term.

Tuition for part-time attendance (fewer than 12 credits per term) is based on the number of credits a student registers for. The per credit tuition rate is $585. Summer and Intersession terms have a per credit tuition rate of $250.

### Books, Tools & Supplies

Books for the Fall and Spring terms are covered by tuition expenses. Students are responsible for purchasing textbooks for the Summer and Intersession terms. Tools and supplies will cost approximately $150 - $2,000 per academic year; this amount may vary substantially depending on the program in which a student is enrolled.

### Annual Student Fees

### Administrative Fees

| | |
|---|---|
| Returned Check | $30 |
| Official Transcript | $10 |
| Unofficial Transcript | $5 |
| Challenge Exam | $585 |
| Program Fee – ADT, CDT | $1,000 |
| Program Fee – AUT, DTT, DPM | $1,000 |
| Program Fee – BET, EET, MEC | $1,000 |
| Program Fee – BPM, CCM, ECT, HAC | $1,000 |
| Program Fee – CIT, CSA | $1,200 |
| Program Fee – AMT, AVT, WTC, WFT | $1,400 |
| Program Fee – PTA, RAD, VET | $1,500 |

**Technology & Facilities Fee** **$1,500**

**Graduation Fee*** **$200** **(Second-year only)**

*Regardless of the number of credits registered, students will be billed 100% for graduation and program fees.

### Medical Inoculation Fees

Information on medical inoculations for Biomedical Equipment Technology, Physical Therapist Assistant, Radiologic Technology, and Veterinary Nursing can be found in the respective program section. These costs vary for each program based on the type and fee for each clinical experience.

### Senior Testing Fees

Students in their final term of the Automotive Technology, Aviation Technology, Diesel Truck Technology, Heating, Ventilation and Air Conditioning Technology, Welding Fabrication and Manufacturing Technology, and Welding Technology programs are charged a testing fee that is required for industry certification.

## Refund and Adjustment of Charges

Students who officially withdraw from their programs of study at Johnson College may be eligible for an adjustment of tuition charges and fees. Adjustments are based on the official date of withdrawal or the last day of documented class attendance, as determined by the Office of the Registrar.

### Tuition Adjustment

Students who withdraw or are terminated from Johnson College during the term will be entitled to an adjustment of tuition and fees according to the following schedule:

| Withdrawal | Adjustment |
|---|---|
| Weeks 1 and 2 | 100% |
| Week 3 | 50% |
| Week 4 | 25% |
| After Week 4 | 0% |

Johnson College institutional grants and scholarship funds awarded to students who withdraw or are terminated may be adjusted according to the same schedule. Pennsylvania and other state grants will be adjusted in accordance with the agencies' stated guidelines. PHEAA grant funds may be reduced by the same percentage as the tuition reduction received by students who withdraw from their programs of study. However, it should be noted that PHEAA reserves the right to make the final decision on the percentage of the reduction.

Federal aid and/or state grant assistance (such as Pell and/or PHEAA) and/or institutional assistance from Johnson College may not cover all unpaid institutional charges due to the College upon the student's withdrawal. In such cases, students will be billed for remaining balances.

# FINANCIAL AID

Financial aid helps meet college costs, both educational (tuition and fees) and living (food, housing, and transportation). Through various programs offered by state and federal governments, as well as private lenders, financial aid helps the cost of education become affordable.

Several forms of financial assistance are available to students who qualify. Each funding source has its own eligibility requirements. More information is available through the Financial Aid Office.

## Grants

- Federal Pell Grant*
- Federal Supplemental Educational Opportunity Grant (FSEOG) *
- PHEAA Grant (Pennsylvania Higher Education Assistance Agency) *
- Johnson College Institutional Grant *

## Loans

- Federal Direct Subsidized Student Loan *
- Federal Direct Unsubsidized Student Loan
- Federal Direct Parent Loan for undergraduate Students (PLUS)

**Indicates need-based aid to eligible students*

Participation in programs funded by state and federal agencies requires the Financial Aid Office to comply with the regulations set forth by each agency concerning student eligibility and academic progress standards. This will generally require the completion of the Free Application for Federal Student Aid (FAFSA). All students are required to complete a FAFSA or sign a FAFSA waiver form when other funding sources exist.

Responsibility for financing an education rests first with students and their families. Financial aid should be viewed as supplementary, to be used only after the full resources of students and their families are committed.

## Federal Guidelines for Financial Aid

In accordance with federal regulations, students who receive federal financial aid and withdraw from Johnson College during the first 60% of a term will have their federal financial aid adjusted based on the percentage of the term completed prior to the withdrawal. Students will be entitled to retain the same percentage of the federal financial aid received as the percentage of the term completed. This percentage is calculated by dividing the number of days in the term (excluding breaks of five days or longer) into the number of days completed prior to the withdrawal (excluding breaks of five days or longer). The date of withdrawal will be based on the official date of withdrawal or the last day of documented class attendance as determined by the Registrar.

Once the amount of federal funds to be returned has been calculated, the funds will be returned in the following order:

1. Unsubsidized Federal Direct Student Loans
2. Subsidized Federal Direct Student Loans
3. Federal Direct Parent Loan for Undergraduate Students (PLUS)
4. Pell Grants
5. Federal Supplemental Educational Opportunity Grants (FSEOG)

The amount to be returned to a specific federal program may not exceed the total amount awarded from that program.

Further information about refunds of financial aid may be obtained from the Financial Aid Office.

## Work-Study

Students who are interested in employment may obtain information from the Financial Aid Office. Federal Work-Study is a federally-funded employment program that provides supplemental assistance to students who demonstrate financial need. Students participating in the Federal Work-Study program will be required to perform community service hours at an off-campus location in the academic year in which they receive federal funds.

## Satisfactory Academic Progress (SAP)

Students attending Johnson College who wish to be considered for Federal Title IV (*Pell Grant, Federal Supplemental Educational Opportunity Grant (FSEOG), Federal Work-Study, Direct Student Loan, or Direct Parent PLUS Loan)* and institutional aid, in addition to meeting other eligibility criteria, must maintain satisfactory academic progress (SAP) in the course of study being pursued. The College is required to establish a SAP standard in accordance with U.S. Department of Education regulation 34 CFR 668.34. This SAP policy is as strict as or stricter than academic policies for students who are not receiving Title IV Aid. Students' academic records will be reviewed at the end of each enrolled term (i.e., fall, spring, and summer) after grades are calculated by the Registrar's Office. All terms in which the student is enrolled, including summer, must be considered in the determination of SAP, even terms for which the student did not receive federal financial aid. Students who fail to meet minimum SAP standards will be notified via Johnson College email and U.S. mail once the determination has been made.

### Satisfactory Academic Progress Minimum Standards

Satisfactory academic progress is assessed based on three criteria: Completion Rate (CR), Career (Cumulative) Grade Point Average (CGPA), and Maximum Time Frame (MTF). To be considered for federal financial aid, students must show steady progress toward their degree and meet the standards outlined below.

| Minimum SAP Standards | |
|---|---|
| **CR** | 67% |
| **CGPA** | 2.0 |
| **MTF** | Total credits attempted cannot exceed 150% of required program credits. |

#### Completion Rate (CR)

Completion Rate (CR) is a quantitative measure of progress towards graduation. In order to be eligible for financial aid, a student must have successfully completed (i.e. earned) at least 67% of their attempted credits.

Attempted credits include all credits for courses a student remains enrolled in after the Add/Drop date. This includes courses with grades of F (fail), SA (administrative withdrawal), and W (withdrawal), as well as repeated courses, transfer courses, and developmental courses. Earned credits are those from courses with a passing grade (D or better), as well as transfer credits accepted by Johnson College. Credits for courses with grades of F, SA, or W are considered unearned. The completion rate is calculated using the formula below.

| | |
|---|---|
| $\frac{\text{total number of earned credits}}{\text{total number of attempted credits}} \times 100 = \%\ \text{CR}$ | |
| $\frac{12\ \text{earned credits}}{18\ \text{attempted credits}} \times 100 = 67\%\ \text{CR}$<br>**successful CR** | $\frac{9\ \text{earned credits}}{18\ \text{attempted credits}} \times 100 = 50\%\ \text{CR}$<br>**unsuccessful CR** |

## Career Grade Point Average (CGPA)

Career Grade Point Average (CGPA) is a quantitative measure of academic performance. Students must maintain a minimum CGPA of 2.0 to be eligible for financial aid. Grades of I (incomplete), W (withdrawal), and transfer credit (T) are not included in the satisfactory academic progress (CGPA calculation).

## Maximum Time Frame (MTF)

Maximum Time Frame (MTF) refers to the maximum number of credits a student can attempt while still being eligible for financial aid. MTF cannot exceed 150% of the total number of credits required to complete a program. Full-time students should earn approximately 15 credits per term in order to remain below MTF. Developmental courses are counted as hours attempted and, if successfully completed, hours earned. Credits earned in developmental courses are counted toward academic progress but do not count toward degree requirements. Therefore, these credits will be excluded from the MTF calculation. Total credits for MTF may not be rounded up or down. To calculate MTF, multiply program required credits by 1.5 (150%).

| Program | Program Required Credits | MTF |
|---|---|---|
| Welding Certificate | 30 | 45 |
| Electrical Construction Technology | 64 | 96 |
| Radiologic Technology | 71 | 106.5 |

## Repeat Coursework

Financial aid is available for the first repeat of any previously passed course. Financial aid is also available for each attempt of a previously failed course. However, all attempts are included in the Completion Rate (CR) and Maximum Time Frame (MTF) calculations.

*Audited classes are not counted into MTF.

## Change of Program

The first time a student changes their major program of study, the courses that pertain to the previous major are not included in the SAP calculation. However, all courses that fulfill requirements for the new major are used in the SAP calculation. Subsequent changes to a student's major are calculated into Satisfactory Academic Progress.

### Second Certificate or Degree

If a student enrolls for a second certificate or degree, after completion of a certificate or degree, the student may be eligible for an additional 150% Maximum Time Frame of financial aid for their new program of study. This will be determined based upon compliance with all other federal regulations.

## Unsatisfactory Academic Progress

Failure to meet satisfactory academic progress (SAP) requirements set forth by Johnson College in accordance with federal regulations will result in one of two consequences.

### SAP Warning

Failure to meet the Career Grade Point Average or Completion Rate requirements for a term, whether or not the student is receiving financial aid, will result in SAP Warning. The student remains eligible for financial aid during the currently enrolled term, but is at risk of losing financial aid eligibility for the subsequent term if SAP standards are not met.

### SAP Suspension

Exceeding the Maximum Time Frame will result in SAP suspension and loss of the student's financial aid eligibility. Failure to meet the Career Grade Point Average or Completion Rate requirements for two consecutive terms, whether or not the student is receiving financial aid, will result in SAP suspension and loss of financial aid eligibility.

### SAP Suspension Appeal

A student may appeal SAP Suspension. The forms required to begin the appeal process will be sent to the student along with their SAP Suspension letter by mail. Upon receiving these documents, the student should schedule an appointment with their academic advisor to create an academic plan aimed at achieving satisfactory academic progress. The completed documents should then be submitted to the Financial Aid Office for review.

- If the appeal is denied, the student remains ineligible for financial aid for the enrolled term.
- If the appeal is approved, the student will be eligible for financial aid for the enrolled term.

The Financial Aid Office will monitor the student's progress at the end of the term for which the approved appeal was submitted.

- If the student meets the criteria outlined in the SAP academic plan, they will be considered to have satisfactory academic progress and remain eligible for financial aid for the subsequent term.
- If the student does not meet the criteria outlined in the SAP academic plan, SAP Suspension will remain in effect and the student will be ineligible for financial aid for the subsequent term. A new SAP suspension appeal form and academic plan may be submitted for review.

## Reinstatement of Financial Aid Eligibility

Financial aid eligibility will be reinstated when:

1. An SAP Suspension appeal is approved by the Financial Aid Office.
2. The student makes satisfactory academic progress towards a degree and meets SAP standards while attending Johnson College using their own resources. The student must contact the Financial Aid

Office after final grades have been posted to their transcript to have their eligibility reviewed for reinstatement.

Once a student regains eligibility, they will be awarded financial aid subject to financial aid eligibility requirements and the availability of funds.

## Veteran Beneficiaries

The law requires that educational assistance benefits to veterans and other eligible persons be discontinued when the student ceases to make satisfactory progress toward completion of their training objective. Benefits can be resumed if the student re-enrolls in the same educational institution and in the same program. In other cases, benefits cannot be resumed unless the Department of Veterans Affairs (VA) finds that the cause of the unsatisfactory attendance, conduct, or progress has been removed and the program of education or training to be pursued by the student is suitable to their aptitudes, interests, and abilities.

Any veteran or dependent of a veteran will follow the same academic progress policy as those students who utilize Title IV aid. However, if a veteran or a dependent of a veteran is placed on probation or dismissed from the College, the School Certifying Official will notify the VA via Enrollment Manager. Academic progress is checked throughout the term and the student will be notified via email of their status.

## Industry Tuition Reimbursement Plans

Many companies provide their employees with reimbursement for education expenses. Students should consult their employer for further information. Arrangements for this type of payment should be set up with the Student Business Office prior to the start of classes.

## Scholarships and Merit Awards

Johnson College offers a variety of scholarships to meet the financial needs of new and returning students. These awards may be based on financial need, community commitment, and/or academic standing. Each scholarship has specific criteria. For the most up-to-date scholarship information, please visit the scholarship webpage. The scholarship application, which consists of four questions, can be submitted online, via email, in person, or by U.S. mail. Please be sure to follow the instructions carefully. Each part of the application is reviewed and critiqued by Johnson College's Scholarship Committee. *Any student who submits a scholarship application who has not completed a FAFSA will not be taken into consideration for a scholarship until the FAFSA is completed.*

Applicants will receive a notification letter from the Financial Aid office indicating receipt of their application and the timeframe in which it will be reviewed by the scholarship committee. ***Priority deadline for current/returning Johnson students is May 1st.*** Upon review by the committee, all submissions will receive a response. Recipients will be required to attend the annual scholarship breakfast and to send the donor of their scholarship a thank you letter.

Award amounts for endowed scholarship funds are determined annually according to earnings on the funds and in accordance with Johnson College policies.

## VA Pending Payment Compliance

In accordance with Title 38 US Code 3679 subsection (e), this school adopts the following additional provisions for any students using U.S. Department of Veteran Affairs (VA) Post 9/11 G.I. Bill® (Ch. 33) or

Vocational Rehabilitation and Employment (Ch. 31) benefits, while payment to the institution is pending from the VA. This school will not:

- Prevent the student's enrollment;
- Assess a late penalty fee to;
- Require student secure alternative or additional funding;
- Deny their access to any resources (access to classes, libraries, or other institutional facilities) available to other students who have satisfied their tuition and fee bills to the institution.

However, to qualify for this provision, such students may be required to:

- Provide Chapter 33 Certificate of Eligibility (or its equivalent) or for Chapter 31, VA VR&E's contract with the school on VA Form 28-1905 by the first day of class.

Note: Chapter 33 students can register at the VA Regional Office to use E-Benefits to get the equivalent of a Chapter 33 Certificate of Eligibility. Chapter 31 students cannot get a completed VA Form 28-1905 (or any equivalent) before the VA VR&E case-manager issues it to the school.

- Provide Written request to be certified

Title 38 U.S.C. §3691A(a)(2)(B) provides that an educational institution **may not** take the following actions when a member receives orders for a period of service:

- Assigning the member a failing grade,
- Reducing the member's grade point average,
- Characterizing any member's absence(s) as unexcused, or
- Assessing a financial penalty on a member because of a withdrawal or leave of absence due to receiving orders for service.

Additionally, Title 38 U.S.C. §3691A(b) provides that an educational institution **must** take the following actions when a member withdraws due to receiving orders for a period of service:

- Refunding all tuition and fees paid for the academic term to the appropriate party. Please note that VA's interpretation of academic term is the term as reported to your State Approving Agency and VA.
- Refunding payments made by the student (or behalf of the student) to the institution for housing. Please note that in this instance the reference to housing is not the monthly housing allowance provided by the Post 9/11 GI Bill® but rather housing costs such as dorm fees.

Finally, Title 38 U.S.C. §3691A(c) provides that an educational institution **must** take the following actions when a member takes a leave of absence from a course(s) due to receiving orders for a period of service:

- Assigning a grade of incomplete (or equivalent) for the course(s) during the term, and
- Providing the opportunity to complete the term after the period of service.

Disapproval of courses: (a)(1) Except as provided by paragraph (2), any course approved for the purposes of this chapter which fails to meet any of the requirements of this chapter shall be immediately disapproved by the Secretary or the appropriate State approving agency. An educational institution which has its courses disapproved by the Secretary or a State approving agency will be notified of such disapproval by a certified or registered letter of notification and a return receipt secured.

(2) In the case of a course of education that would be subject to disapproval under paragraph (1) solely for the reason that the Secretary of Education withdraws the recognition of the accrediting agency that accredited the course, the Secretary of Veterans Affairs, in consultation with the Secretary of Education, and notwithstanding the withdrawal, may continue to treat the course as an approved course of education under

this chapter for a period not to exceed 18 months from the date of the withdrawal of recognition of the accrediting agency, unless the Secretary of Veterans Affairs or the appropriate State approving agency determines that there is evidence to support the disapproval of the course under this chapter. The Secretary shall provide to any veteran enrolled in such a course of education notice of the status of the course of education.

(b) Each State approving agency shall notify the Secretary of each course which it has disapproved under this section. The Secretary shall notify the State approving agency of the Secretary's disapproval of any educational institution under chapter 31 of this title.

(c)(1) Notwithstanding any other provision of this chapter and subject to paragraphs (3) through (6), the Secretary shall disapprove a course of education provided by a public institution of higher learning if the institution charges tuition and fees for that course for covered individuals who are pursuing the course with educational assistance under chapter 30, 31, or 33 of this title while living in the State in which the institution is located at a rate that is higher than the rate the institution charges for tuition and fees for that course for residents of the State in which the institution is located, regardless of the covered individual's State of residence.

(2) For purposes of this subsection, a covered individual is any individual as follows:

(A) A veteran who was discharged or released from a period of not fewer than 90 days of service in the active military, naval, or air service less than three years before the date of enrollment in the course concerned.
(B) An individual who is entitled to assistance under—
(i) section 3311(b)(9) of this title; or
(ii) section 3319 of this title by virtue of the individual's relationship to—
(I) a veteran described in subparagraph (A); or
(II) a member of the uniformed services described in section 3319(b) of this title who is serving on active duty.
(C) An individual who is entitled to rehabilitation under section 3102(a) of this title.

(3) If after enrollment in a course of education that is subject to disapproval under paragraph (1) by reason of paragraph (2)(A), (2)(B), or (2)(C) a covered individual pursues one or more courses of education at the same public institution of higher learning while remaining continuously enrolled (other than during regularly scheduled breaks between courses, semesters or terms) at that institution of higher learning, any course so pursued by the covered individual at that institution of higher learning while so continuously enrolled shall also be subject to disapproval under paragraph (1).

(4) It shall not be grounds to disapprove a course of education under paragraph (1) if a public institution of higher learning requires a covered individual pursuing a course of education at the institution to demonstrate an intent, by means other than satisfying a physical presence requirement, to establish residency in the State.

# STUDENT SERVICES

The Johnson College **Student Handbook** is accessible through the Johnson College student portal via a link in the Student section. The handbook is available to all students to explain assistance, regulations, organizations, and facilities. Students are expected to know and follow the standards of conduct established by Johnson College, which are found in the Student Handbook. It is the responsibility of the student to read the Handbook entirely and to comply with all regulations.

## Academic Advising

Academic advising is a collaborative process between a student and an academic advisor. Each student is assigned an academic advisor based on their program of study and is required to meet with them at least once per term. Academic advisors promote student success by providing academic support and connecting students with campus resources that can assist them throughout their educational experience. This assistance begins once the student is enrolled in academic coursework and has completed new student orientation. Academic advisors facilitate personal growth by encouraging student responsibility, independence, and self-advocacy. A key tenet of academic advising is student responsibility for their own decisions. The student's role is to explore academic, career, and personal goals while academic advisors provide information and guidance needed to achieve those goals. Clear responsibilities exist for each party and are detailed below.

Advisee Responsibilities:

- Schedule appointments with their academic advisor each term, coming prepared with questions pertaining to academic requirements.
- Learn how to use the course catalog and student portal to select courses that fulfill their educational plan.
- Keep a personal record of progress toward meeting graduation requirements.
- Proactively communicate questions or concerns to their academic advisor and promptly respond to outreach.
- Self-advocate and accept responsibility for their decisions.
- Ensure the recommended course sequence is followed and all program and institutional graduation requirements are met. Failure to do so may result in extending the program of study.
- Register for courses during appointed times. Refer to the Office of the Registrar section of this catalog for course registration information.

Advisor Responsibilities:

- Understand and effectively communicate the curriculum, graduation requirements, and college policies through use of the course catalog and student portal.
- Monitor and document advisee degree progress and fulfillment of graduation requirements.
- Provide students with information about available resources and appropriately refer students to other institutional support services.
- Be accessible for meetings via office hours, telephone, email, or video conferencing.
- Maintain confidentiality and adhere to FERPA and institutional guidelines.

The advisor and student should discuss any current courses where the possibility of not obtaining the required grade as per program and college requirements may occur. This discussion will include, but is not limited to, changes to the student's upcoming schedule, overall implications to the student's program of study, and potential impact on the student's ability to qualify for financial aid based on Satisfactory Academic Progress (SAP).

## Counseling Services

The mission of Counseling Services at Johnson College is to assist students who may be experiencing social, personal, or academic challenges. These services include individual sessions for students as well as psychoeducational programming and outreach. Faculty or staff members may refer students for counseling or students may self-refer. All supportive counseling services on campus are free and confidential. In some cases, the counselor may decide that a student's needs would be best met through a community agency. Referrals to off-campus counseling/agencies may be made if a student's needs exceed the supportive services or go outside of the scope of practice that we provide on campus.

## Disability Services

The mission of Disability Services at Johnson College is to provide equal access opportunities, including the establishment and coordination of appropriate accommodations, auxiliary aids and programs to qualified students in accordance with Section 504 of the Rehabilitation Act of 1973 and Americans with Disabilities Act of 1990 as amended by the ADA Amendments Act of 2008. The office exercises a reasonably good faith effort to coordinate accommodations designed to enable students with permanent or temporary disabilities to maximize their educational potential. Students must contact the Counselor/Manager of Disability Services to find out what documentation may be required to substantiate the need for accommodations and to make a request for accommodations. Please refer to the Policies and Procedures section of the Student Handbook for additional information or contact the Counselor/Manager of Disability Services by phone at (570) 702-8956.

Deaf/Hard of Hearing: Students requesting a sign language interpreter should contact the Counselor/Manager of Disability Services as soon as they are accepted to the college. Policies for students utilizing sign language interpreting services can be found in the Policies and Procedures section of the Student Handbook.

## Resource Center

The Johnson College Resource Center, located in the Moffat Student Center, supports both academic and technical programs by providing essential research materials. Students can access resources related to their fields of study, including trade and technical information. The center offers online computer services, course reserves, current textbooks, daily newspapers, wireless internet, and black-and-white or color printing. Computers are equipped with the latest Microsoft Windows and Office Suite. Additionally, the Resource Center features spaces for both individual and group study.

For a full list of databases, please see the Resource Center website. In addition, Johnson College holds a partnership with the Scranton Public Library, one of the six libraries making up the greater Lackawanna County Library System. For more information on services provided via this partnership, contact the Resource Center.

## Tutoring

Professional tutoring opportunities are available for general education and limited program area courses. Appointments are offered in both one-on-one and group sessions. Walk-in hours are also offered. Students can sign up for tutoring using the following link: https://portal.johnson.edu/ICS/Students/Forms.jnz

## Digital Bookstore

All Johnson College students are automatically enrolled in the Equitable Access Textbook program for the fall and spring terms. For these terms, all required books will be digitally linked in D2L and available on the first day of classes. If a digital version is unavailable, a physical textbook will be provided.

For Intersession and Summer sessions, however, students must purchase their own books. To assist with this, Johnson College will offer a digital bookstore where students can find and purchase the required materials.

Students who prefer a physical copy of their digital textbook have the option to purchase or rent new or used text materials, on their own, from any vendor they choose. eCampus is one such option and can be accessed by visiting https://jc.ecampus.com/. Any questions regarding your on-line purchases can be directed to the Resource Center located in the Moffat Student Center.

## Career Services

Johnson College's Career Services department works to support current students in their entire educational experience in a variety of ways to develop the skills necessary for success, and if applicable, their real-world internship experience. The department works to inform students and alumni of current job openings, posting to social media LinkedIn and updating job boards at both the Scranton and Hazleton campuses.

Résumé workshops, in-class visits, and one-on-one student meetings prepare students for the job application process. The "Career Readiness Guide", created by Career Services, includes step-by-step instructions for creating cover letters, résumés, and job-related emails. Career counseling, introductory speeches and mock-interviews are also offered to help students prepare for employment.

Class tours and industry field trips allow the opportunity for students and industry partners to engage in conversations about internship and employment opportunities. During the spring and fall term, the department hosts an annual career fair. This event is exclusive to Johnson College students and alumni, providing students with an opportunity to meet with representatives of many employers, as Johnson College offers opportunities for career assistance for life.

## Student Success Office

The mission of the Student Success Office is to develop well-rounded and responsible graduates by engaging our students in recreation, leadership, and social opportunities while providing support in an inclusive environment. New student orientation, student conduct, student organizations and events, recreation, dining, military and veteran services, and information regarding off-campus housing are under the direction of the Student Success Office.

Johnson College offers both on and off campus activities. Examples of student organizations include the Student Government Association, the Gaming Club, and the Volunteer Club. Other club opportunities may be available based upon interest and engagement. More information can be found on the department's website at https://www.johnson.edu/current-students/campus-life/.

## Cafeteria

There is a self-serve kiosk, located in the Moffat Student Center with a wide assortment of food and snacks available. The self-service kiosk accepts credit/debit cards. Students can add money to a reloadable card (available at the kiosk), or download the Canteen Connect & Pay app to manage funds and pay directly from the app.

## Fitness Center

The fitness center at Johnson College is available free of charge to current students, faculty and staff. Located in the Moffat Student Center, the fitness center houses cardiovascular equipment machines, free weights, and more. The hours of operation are posted per term. The fitness center is closed on official college holidays.

## Gymnasium

The gymnasium, located in the Moffat Student Center, is open to all current students, faculty, and staff during designated "open gym" times, based on facility availability. During open gym, participants may engage in recreational activities. Basketballs are always available, and additional equipment can be requested through the Office of Student Success. Only sneakers or rubber-soled athletic shoes are permitted on the gym floor.

# OFFICE OF THE REGISTRAR

The Office of the Registrar offers student services and support to the Johnson College community with a strong commitment to integrity. We maintain accurate student records, uphold the College's academic policies, oversee registration and scheduling, and provide referrals and resources to promote successful academic progression and completion.

The mission of the College Registrar's Office is to provide accurate, efficient, and student-centered services that support the academic success and administrative needs of students, faculty, and staff. We are committed to maintaining the integrity and confidentiality of academic records while ensuring seamless enrollment, registration, and graduation processes. Our goal is to facilitate a positive educational experience through clear communication, innovative solutions, and a dedication to service excellence.

## Transcript Requests

Johnson College will provide official transcripts for a fee of $10 each upon request to current or former students. Official transcripts (bearing the seal of the College and the signature of the Registrar) are sent directly to the educational institution, agency, or individual indicated by the student. Official transcripts will not be issued unless all financial obligations to the College have been met at the time of the request.

Johnson College is permitted to withhold official transcripts from former students who have defaulted on a Federal Stafford Loan. An unofficial copy of the transcript will be furnished to the former student with the notation "unofficial" stamped on it. Current students can access their unofficial transcript via the Student Portal at no cost.

To request an official transcript, visit the Registrar's website at www.johnson.edu/registrar.

## Change of Name/Address

The Office of the Registrar must be informed in writing of any changes to a student's personal information, such as name, address, and telephone number. It is the student's responsibility to keep the College informed of any changes to student information. Students can submit a request to update their personal information through the portal, or by emailing the Registrar's Office from their Johnson College email.

In the event of a name change, legal documentation must be presented. Please contact the Registrar at registrar@johnson.edu for more information regarding the name change process.

## Approval for Off-Campus Study

Johnson College will accept transfer credits from other accredited institutions for courses taken by current students, provided the student completes the necessary paperwork and receives approval from the Registrar prior to enrolling in the course. After completing the course, the student must submit an official transcript to the Registrar, showing a grade of "C" or higher (note that program-specific courses may have different grading requirements). It is the student's responsibility to ensure that official transcripts are sent to the Office of the Registrar. A maximum of six credits from approved off-campus courses may be transferred. The Approval for Off-Campus Study form is available on the Student Portal under "Forms."

## Prior Learning Assessment

Prior Learning Assessment (PLA) refers to a formal process for assessing the knowledge and skills students acquire through life experiences. If these experiences reflect college-level learning and match the competencies of college courses, higher education institutions may grant college credit. PLA can include, but is not limited to, work or military experience. Students seeking to have their prior learning evaluated for credit must submit supporting documentation as outlined by the Office of the Registrar. This may include, but is not limited to, letters from employers, job descriptions, and other relevant materials, along with the signed PLA form from the Office of the Registrar. Prior learning experiences completed up to five years before the request will be reviewed by the Office of Academics, relevant faculty, and the Office of the Registrar. The PLA form is available on the Student Portal.

## Credit by Examination

### AP (Advanced Placement)

Students who have completed Advanced Placement courses in high school may be eligible for transfer credit. Students seeking transfer credit from AP courses must provide an official transcript from the College Board. Scores of "3" or better on the respective College Board examination will be considered for academic credit. Students will be notified if transfer credit is awarded. The credits will be entered on their transcript as a "T" but not calculated into their GPA. Official College Board transcripts must be received by Johnson College by August 1st for students entering in the Fall term and December 1st for Spring entrants.

### CLEP (College Level Examination Program)

Students who have completed CLEP exams prior to attending Johnson College should submit their exam scores at the time of application to the College (a scaled score of 50 or higher is required). The appropriate faculty member and the Office of the Registrar will review the test to determine applicability to awarding credit for Johnson College coursework.

### Johnson College Challenge Examination

Students who believe they have adequate knowledge or skills in a subject area through prior academic coursework, military service, non-credit training, work experience, etc. and who do not have transcripts documenting that learning may be eligible to sit for a Johnson College Challenge Examination.

- To complete a course under this policy, a student must meet with the appropriate faculty member and/or academic advisor to determine eligibility, then submit a Challenge Examination form (available on the Student Portal) to the Director of Academics.
- Participation is limited to matriculated students at Johnson College. Students must not have previously attempted Credit by Examination for the course. Students must not have a grade for a higher-level college course in the same subject or have passed any course for which the challenged course is a prerequisite. The Challenge Examination must be requested and completed prior to the end of the third week of the term.
- The Challenge Examination form (located on the Student Portal) must be signed by the student, Program Director, Director of Academics, Student Business Office, and Registrar. The fee for the administered. Fees are non-refundable and must be paid at the Business Office. The fee will be waived with proof of veteran status.
- Successful completion of a Challenge Examination will be identified on the student's transcript as transfer credit for the course. Credit by Examination credits may be included in the Credit Residence Requirement. The college will not allow more than three full-course equivalents completed by Challenge Examination to count toward a degree, unless the Director of Academics approves a request based on a demonstrated hardship. Each department determines the courses for which it will offer Challenge Examinations.

**Math Placement Test**

A math placement test is offered to all students entering the following programs:

- Advanced Manufacturing Technology
- Architectural Drafting & Design Technology
- Biomedical Equipment Technology
- Carpentry & Cabinetmaking Technology
- Civil Design Technology
- Computer Information Technology
- Electronic Engineering Technology
- Mechatronics Technology
- Veterinary Nursing
- Welding Fabrication and Manufacturing Technology

The result of the math placement test will be used to place a student into the appropriate math course and also determine whether 1 or 2 math courses are required in the student's program of study. A student who completes the math placement test with a minimum score of 80% will receive a waiver for MAT 101 (College Algebra I and Trigonometry) and a grade of "T" will be posted on the student's transcript for MAT 101.

Students in any of the academic programs listed above who do not take the math placement test prior to the start of their academic program or who do not obtain the minimum score will be required to begin their sequence of math courses in MAT 101 or take a challenge exam to waive the MAT 101 requirement (see Johnson College Challenge Examination below).

## Credit for Military Experience

**Military Educational Programs**

Students who have completed educational programs provided by branches of the U.S. Armed Services may be eligible to receive academic credit for their coursework. As part of the admissions process, students should submit an official transcript through Joint Services Transcript (JST) to document their coursework. To assess the credit value of military-acquired learning, transcripts will be reviewed based on the guidelines outlined in the American Council on Education (ACE) Guide to the Evaluation of Educational Experiences in the Armed Services (Military Guide). Following an evaluation by the relevant faculty and the Office of the Registrar, credit may be granted for applicable military learning, in accordance with ACE Military Guide recommendations or those documented by the Community College of the Air Force, when relevant to the student's program of study. Applicants who have served in the armed forces must provide a certified copy of their DD-214, Report of Separation. The final decision regarding transfer credit evaluation rests with the institution.

**Military Workplace Learning**

Johnson College provides student service members and veterans the opportunity to earn transfer credit based on collegiate-level learning achieved not only through formal school training but also through occupational experience and nationally recognized non-traditional learning testing programs (see Credit by Challenge Examination).

In addition, Johnson College recognizes the value of specialized military training courses. The appropriate faculty and the Office of the Registrar will review and, if appropriate, award credit for Military Occupational Specialties (MOS) and Navy Rates and Ratings as recommended by the ACE Military Guide. Students must submit an official transcript of their military training courses for evaluation. A final determination of transfer evaluation credit is at the discretion of the institution.

## Transcript Evaluation Procedure

Students looking to transfer credit into Johnson College must submit an official copy of their college transcripts to the Office of the Registrar. Coursework previously completed at another regionally accredited institution, or through the Prior Learning Assessment process, will be evaluated relative to its equivalency to Johnson College courses and to the chosen major of study. The Office of the Registrar will make final decisions on acceptance of such coursework for transfer credit. Students who wish to transfer courses must follow the procedures below:

1. Complete the steps listed under Application Requirements.
2. Have official transcripts from all previous institutions sent directly to the Registrar's Office.
    - Course descriptions and/or syllabi may be requested.
3. An evaluation will be completed by the Office of the Registrar. Upon enrollment, an evaluation report will be sent to the students' Johnson College email before the college's drop/add period.

The College accepts a maximum of 30 credits from another accredited institution to qualify for an associate degree and a maximum of 15 credits to qualify for an academic certificate. Only courses completed with a grade of "C" or higher will be considered for transfer credit.

- Physical Therapist Assistant (PTA) and Radiologic Technology (RAD) courses will be evaluated on a case-by-case basis and will require a grade of "B-" or higher. Veterinary Nursing (VET) courses will also be evaluated on a case-by-case basis and will require a grade of "C+" or higher. Credit requested under PLA format may require an equivalent grade of "B" or higher.

Transfer credit will appear on the student's transcript, but only credits from Johnson College will be used in computing the student's Grade Point Average (GPA) and eligibility for academic honors. It is the responsibility of the student to ensure that all courses have been evaluated prior to registration to avoid duplication of courses. In order for students to have transcripts reviewed for their first term of attendance, official transcripts must be received by the Registrar no later than August 1 (for the fall term) or December 1 (for the spring term).

Coursework completed within the past five years will be evaluated according to current standards. Coursework completed more than five years ago will be evaluated on a course-by-course basis. Incoming students only have ONE (1) term to have transcripts reviewed. After their first term, transcripts will not be accepted for review.

## Registration

The Office of the Registrar will announce the registration procedures and dates in advance. Registration occurs in three phases: priority registration (Student Service Members/Veterans), second-year registration (27 or more completed credits), and first-year registration (less than 27 completed credits). Course registration is done through the Student Portal and opens in early November (for the upcoming spring term) and early April (for the upcoming fall term). Please refer to the academic calendar for specific dates. Registration opens at 7:00 AM on the designated date of the student's registration period and closes at 11:59 PM on the last day of the add/drop period. All students must meet with their academic advisor prior to their registration period in order to be cleared for registration. Once cleared, students will be given registration access to the Student Portal, which enables them to register online for classes. Once the registration period begins, course registration is on a first-come, first-served basis. Therefore, it is in the best interest of the student to complete their registration as quickly as possible. If a student has an outstanding balance, a Bursar hold will be placed on their record by the Student Business Office. Students with a Bursar hold will not be permitted to register until the hold is cleared by the Student Business Office.

Students are permitted to attend only those classes for which they have officially registered and paid. It is the responsibility of students to ensure that they are following the suggested program scope and sequence

while meeting all program requirements for graduation. Failure to do so may result in extending their program of study and delaying graduation.

Johnson College reserves the right to cancel a program, course, or section; change the time of meeting; subdivide a section; or combine two or more sections as circumstances may require. Every effort is made to minimize the impact of such changes on students. The Office of the Registrar will process the changes and notify the student via their Johnson College email. Students who are involved in a change of schedule should see their academic advisor.

## Course Section Numbers

Below are the course section designations as seen in the registration portal and on class schedules that allow students to see the format and location of each section.

| Type of Course Section | Section Number Format | Section Number Example |
|---|---|---|
| **Traditional Scranton** (in-person lecture, clinical, lab on Scranton Campus) | Zero + number of the section | 01, 02, 03 |
| **Traditional Hazleton** (in-person lecture, clinical, lab on Hazleton Campus) | Letter H + number of the section | H1, H2, H3 |
| **AVT Airport** (in-person lecture, clinical, lab at the airport) | Letter A + number of the section | A1, A2, A3 |
| **Hybrid** (partially in-person and partially online) | Zero/Letter H/Letter A + number of the section followed by dash (-) HB | 01-HB or H1-HB or A1-HB |
| **Online** (fully online and asynchronous in nature) | Letter O + letter alphabetically according to sections offered | OA, OB, OC |

## Course Audits

Students may choose to audit a course either for personal enrichment or as part of a required retake of a lecture/lab course due to not earning a passing grade in either the lecture or lab component. When auditing a course, students attend classes and engage in lectures and/or lab activities, but they are not required to complete assignments or take exams. Audited courses are marked with an "AU" on the student's transcript, indicating that no grade or credit has been earned.

Students auditing a course for personal enrichment will be charged the current rate for credit-bearing courses. However, students required to audit a course as part of a lecture/lab retake due to a failed grade will not incur additional fees for the audited course. The Program Director has the authority to determine if a student must audit a lecture/lab course retake due to failure to achieve a passing grade.

Before auditing a course, students must obtain approval from their academic advisor. The Registrar's Office will process the audit registration only after the Program Director has granted approval for the course to be audited.

## Change of Course Schedule

### Course Add/Drop

After a student is registered for classes, changes to their schedule can be made by adding and/or dropping courses during the designated add/drop period each academic term. Students may be admitted to another course or change sections, depending on availability of seats, only during the add/drop period of the

academic term (fall, spring, intersession, summer). The add/drop period occurs during the first 2 weeks of the fall and spring terms and the first week of each intersession and summer term, as indicated on the academic calendar. Courses that are dropped during the add/drop period will be removed from the student's transcript. Schedule change (add/drop) forms are available on the Student Portal. Any change in schedule must first be approved by an academic advisor.

### Course Withdrawal

After the add/drop period ends, students can withdraw from 15-week courses until the end of the tenth week, as noted in the academic calendar. A "W" (Withdrawal) grade will appear on their transcript, but it does not impact the GPA. In 7-week courses during the fall and spring terms, voluntary withdrawals are not allowed after the second week (add/drop period).

From the eleventh week of the term to the last day of the course, students are not permitted to withdraw from a class and will receive the grade they earned for the course. For summer and intersession terms, the period of time to withdraw from a course is the same as the add/drop period (1 week from the course start date). The course withdrawal form is available on the Student Portal.

## Change of Program

Currently enrolled students who wish to change their program must complete the Change of Program form available on the Student Portal. Before submitting the form, students are required to meet with their academic advisor. Requests to change programs should be submitted before the start of the term in which the change is intended to take effect. Any Change of Program requests submitted after the add/drop period will be processed and take effect in the following term.

## Separating from Johnson College

Students may voluntarily separate from Johnson College in one of two ways: 1) Leave of Absence or 2) College Withdrawal. The choice depends on the student's intent to return. A Leave of Absence is for students who wish to pause their enrollment for one or two terms and then return to their studies. A College Withdrawal is for students who intend to leave Johnson College without plans to return. In either case, students should meet with their academic advisor and a representative from the Student Business Office prior to separation.

### Leave of Absence

A leave of absence (LOA) is an official period during which a matriculated student is not enrolled in classes. Students can pause their academic progress at Johnson College for up to two consecutive terms (excluding summer and intersession) by requesting an LOA. Students on official leave of absence retain access to their Johnson College accounts, do not need to reapply for enrollment, and return under the same graduation requirements. The deadline to submit a leave of absence for the current term is the end of the add/drop period. The LOA request form is available in the Student Portal.

### College Withdrawal

Students who wish to leave Johnson College and have no intent to return should submit the College Withdrawal form found on the Student Portal. The deadline to submit a College Withdrawal is the end of the 10th week of the term. No grades are recorded on the transcript if the College Withdrawal is submitted before the end of the add/drop period. Otherwise, all grades will be recorded as "W" (Withdrawn) on the transcript. Students who stop attending classes without officially withdrawing from Johnson College will receive the grades earned in their courses. Students who withdraw from Johnson College must be separated from the College for at least one full term (fall or spring), before they may return.

## Returning to Johnson College

Johnson College encourages students to complete their academic degrees. A re-enrollment policy and a readmission policy have been established to assist students in doing so.

### Re-Enrollment Policy

Students who have been separated from Johnson college for no more than one term (not including summer and intersession) are eligible for re-enrollment. This includes students who have received disciplinary suspension or did not enroll in courses for a term. The reason for the separation from Johnson College may require the student to meet with the Chief Academic Officer and/or the Director of Student Affairs prior to being considered for re-enrollment. Students who wish to be re-enrolled must submit a re-enrollment form, meet with their academic advisor, and have no financial obligation due to the College. Students who re-enroll must fulfill the graduation requirements in place upon initial enrollment at Johnson College.

A student wishing to change from a non-health related program to a health-related program is considered a new applicant regardless of the length of separation, and must reapply for admission through the Enrollment Department.

### Readmission Policy

Students who have been separated from Johnson College for 2 or more consecutive terms (excluding summer and intersession) are considered new applicants and must reapply for admission through the Enrollment Department. Students who are readmitted must complete the graduation requirements in effect at the time they re-enter Johnson College. Coursework previously completed will be evaluated to determine if it meets current program requirements. Students who have taken courses at other post-secondary institutions since their last date of attendance at Johnson College must submit official college transcripts of that coursework.

### Readmission Procedure

1. The student must complete the Johnson College application.
   a. The Enrollment Department will review all material needed for the readmission process.
   b. The Student Business Office will determine if the student is in good financial standing with the College.
2. Registration of students deemed eligible for readmission will be reviewed by the Chief Academic Officer to determine if there are any stipulations to be added to readmission.
   - Students eligible for readmission may be required to adhere to a specific academic plan.
3. The student must then complete course registration procedures in conjunction with an academic advisor.
4. The student is encouraged to meet with the Financial Aid Office to develop a plan to finance their education.

### Veteran Readmission

Johnson College complies with the Readmission Requirements for Service Members as outlined in Section 487 of the Higher Education Opportunity Act (HEOA). The HEOA provides that an institution may not deny readmission to a service member of the uniformed services for reasons relating to that service. In addition, a student who is readmitted under this section must be readmitted with the same academic status the student had when the student last attended the institution.
This applies to active duty service in the Armed Forces, whether voluntary or involuntary, and including service as a member of the National Guard or Reserve, for a period of more than 30 days under a call or order to active duty of more than 30 days. To view the full act visit: https://www.ed.gov/laws-and-policy/higher-education-laws-and-policy/higher-education-opportunity-act-of-2008.

## Student Records Maintenance and FERPA

In accordance with the Family Educational Rights and Privacy Act of 1974 (FERPA), student records are maintained by the Office of the Registrar and are available for review by appointment during normal business hours. All documents are the property of Johnson College and may not be copied, duplicated or removed.

Student records may be viewed by College officials with a legitimate educational interest, certain federal and state agencies responsible for enforcement of FERPA, officials of other colleges to which the student has sought enrollment, and accrediting institutions. In the case of a health or safety emergency, parents who claim a student as a dependent for income tax purposes may also view the records. All other requests for student educational records must have the written consent of the student. Students can submit FERPA permissions through the Student Portal.

FERPA exempts certain records from the individual's examination, as follows:

- Financial records of parents
- Medical or paramedical records used only for treatment purposes; the individual may have a doctor or other competent professional review these records
- Law enforcement records that are used solely for law-enforcement purposes
- Confidential letters of reference submitted prior to January 1, 1975 or letters of reference submitted after January 1, 1975 that were designated as confidential by the student at the time of his/her solicitation or submission

### Student Rights of Privacy and Access

Unless directed by the courts or by determination of a school official that a "need to know" situation exists, information other than Directory Information is not released to a third party without a student's written consent. Directory Information includes the student's name, address, telephone number, enrollment status, e-mail address, program of study, dates of attendance, participation in activities and sports, honors received, degrees awarded and dates of awarding.

### Notification of Rights under FERPA for Postsecondary Institutions

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights include:

1. **The right to inspect and review the student's education records within 45 days of the day the University receives a request for access.** Students should submit to the registrar, head of the academic department, or other appropriate official, written requests that identify the record (s) they wish to inspect. The University official will arrange for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.

2. **The right to request the amendment of the student's education records that the student believes are inaccurate or misleading.** Students may ask the University to amend a record that they believe is inaccurate or misleading. They should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

3. **The right to consent to disclosures of personally identifiable information contained in the student's education record, except to the extent that FERPA authorizes disclosure without consent.** One exception, which permits disclosure without consent, is disclosure to school officials

with legitimate educational interests. A school official is a person employed by the University in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, collection agent or official of the National Student Clearinghouse); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.

The University may disclose education records in certain other circumstances:

- To comply with a judicial order or a lawfully issued subpoena;
- To appropriate parties in a health or safety emergency;
- To officials of another school, upon request, in which a student seeks or intends to enroll;
- In connection with a student's request for or receipt of financial aid, as necessary to determine the eligibility, amount, or conditions of the financial aid, or to enforce the terms and conditions of the aid;
- To certain officials of the U.S. Department of Education, the U.S. Comptroller General, or State and local educational authorities, in connection with certain State or Federally supported education programs;
- To accrediting organizations to carry out their functions;
- To organizations conducting certain studies for or on behalf of the University;
- The results of an institutional disciplinary proceeding against the alleged perpetrator of a crime of violence may be released to the alleged victim of that crime with respect to that crime.

4. **The right to file a complaint with the U.S. Department of Education concerning alleged failures by the University to comply with the requirements of FERPA.** The name and address of the office that administers FERPA is: Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue, SW, Washington, DC, 20202-4605.

5. **The University designates the following as public or "Directory Information":** The student's name, address, telephone number, email address, dates of attendance, previous institution(s) attended, major fields of study, enrollment status (i.e. undergraduate or graduate, full-time or part-time), awards, honors, degree(s) conferred (including dates), past and present participation in officially recognized sports and activities, physical factors (height, weight) of athletes, date and place of birth and other similar information.

6. **Students may restrict the release of "Directory Information", except to school officials with legitimate educational interests and others as indicated in point #3 above:** To do so, a student must make the request in writing to the Registrar's Office, Johnson College, 3427 North Main Avenue, Scranton, PA 18508. Once filed, this request becomes a permanent part of the student's record until the student instructs the University, in writing, to have the request removed.

## Release of Directory Information

Johnson College may disclose appropriately designated "directory information" without written consent, unless the student has advised the College to the contrary by signing a Request to Prevent Disclosure of Directory Information. The form is available in the Student Portal.

"Directory information" is defined as a student's name, address, telephone number, enrollment status, e-mail address, program of study, dates of attendance, participation in activities and sports, honors attained, degrees awarded and dates of awarding. Johnson College assumes the failure on the part of any student to specifically request the withholding of "directory information" indicates individual approval for the disclosure.

# OFFICE OF ACADEMICS

## Length of Programs

The academic year consists of 15-week terms (semesters) during the fall and spring, and 5-week terms during winter (intersession) and summer (summer I and II). Programs of degree-based education generally start in the fall term and run 22 months in length (four terms totaling 60 weeks) except those which may require summer internships or practicums. Total credit hours and schedule of program may vary by department, including summer term or spring term starts.

The Building and Property Maintenance Technology, Diesel Preventative Maintenance Technology, Industrial Technology, Welding Technology, and Cybersecurity Analytics & Operations certificate programs are 9 months in length.

## Student Academic Course Load

A student is considered full-time when registered for a minimum of 12 credits for the fall or spring term. A student is considered part-time when registered for fewer than 12 credits for the fall or spring term. A full-time student typically carries 12 to 20 credits in both the fall and spring terms. An academic overload occurs when a student attempts to register for more than 20 credits in a term. Students who wish to register for more than 20 credits must have the permission of the Director of Academics. Students who are granted permission for an academic overload are subject to additional tuition charges.

## Credit Hours

The U.S. Department of Education, in 34 CFR Section 600.2, defines "credit hour" as: "…an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

(1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester (term) or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or,

(2) at least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution, including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours."

The Pennsylvania regulation states, in part, "A semester (term) credit hour represents a unit of curricular material that normally can be taught in a minimum of 14 hours of classroom instruction, plus appropriate outside preparation or the equivalent as determined by the faculty. A quarter credit hour represents a unit of curricular material that normally can be taught in a minimum of 10 hours of classroom instruction, plus appropriate outside preparation or the equivalent as determined by the faculty." 22 Pa. Code Section 31.21(b).

Each course is assigned a credit-hour value based upon the required weekly hours spent in the classroom, laboratory, or program area, along with the appropriate number of additional outside work hours needed to support the course's instructional content.

At Johnson College, students must complete forty-five (45) clock hours of work to receive 1 credit. One (1) clock hour is equivalent to a scheduled 50 minute period.

- One credit = 45 clock hours
- Two credits = 90 clock hours
- Three credits = 135 clock hours
- Four credits = 180 clock hours

The typical distribution of clock hours is one-third instruction and two-thirds outside preparation, however the distribution between instructional time and outside work may vary from course to course. Examples of this distribution are shown below.

15 clock hours of lecture + 30 clock hours of additional outside work = 1 credit
30 clock hours of lab +15 clock hours of additional outside work = 1 credit
45 clock hours of internship = 1 credit
Clinical hours = See programmatic handbook

## Grading System

Course achievement level, grade point average (GPA), and career grade point average (CGPA) are provided on transcripts using the following system:

| Letter Grade | Numerical Relationship | Quality Points |
|---|---|---|
| A | 96-100 | 4.0 |
| A- | 92-95 | 3.67 |
| B+ | 88-91 | 3.33 |
| B | 84-87 | 3.0 |
| B- | 80-83 | 2.67 |
| C+ | 76-79 | 2.33 |
| C | 72-75 | 2.0 |
| C- | 68-71 | 1.67 |
| D+ | 64-67 | 1.33 |
| D | 60-63 | 1.0 |
| F | 0-59 | 0.0 |

| | | | |
|---|---|---|---|
| I* | Incomplete | P | Pass |
| W | Withdrawal | F | Fail |
| SA** | Stopped Attending | R | Repeat |
| AU | Audit | | |

* A grade of "I" (Incomplete) will be awarded only in exceptional circumstances. An "I" grade must be resolved by the end of the add/drop period of the following fall/spring term. If not resolved, the "I" grade will be converted to an "F".

**A grade of "SA" (Stopped Attending) will be assigned when a student does not attend a course for 2 consecutive academic calendar weeks. An "SA" is calculated into the term GPA and career GPA in the same manner as an "F".

A student's career Grade Point Average (CGPA) is calculated using the following formula:

$$\text{Career GPA (CGPA)} = \frac{\text{total quality points earned}}{\text{total credit hours attempted}}$$

## Repeated Courses

Students who receive an "SA," "F," or "W" in a course must retake and pass the course if it is required for graduation. The original grade will remain on the transcript, along with a repeat designation. The higher grade earned will count towards the student's term and career GPA. A course may be repeated up to two times, allowing for a total of three attempts.

Students who receive an "SA", "F", or "W" in a course may choose to take the course at another institution and transfer the credit to Johnson College. In this event, the original grade will remain. Transfer credit is not used in the calculation of a student's career GPA. Please refer to the Approval for Off-Campus Study transfer information in the Office of the Registrar section of this catalog for more information.

Students who receive an "SA," "F," or "W" in either the lecture or lab component of corequisite courses may be required to audit the component they previously passed.

## Attendance Policy

### (In-person and online)

Johnson College follows federal regulations that require verification of class attendance for all students receiving federal financial aid or veterans' benefits. To remain eligible for these benefits, students must attend the classes for which aid is awarded. Financial aid may be reduced or canceled based on attendance records.

The following policy applies to all students enrolled in credit-bearing courses:

- Students are expected to attend and participate in all scheduled classes, whether delivered in-person or online.
- For in-person courses, students must be physically present during scheduled instruction.
- For online courses, students are considered "in attendance" if they complete at least one graded activity per week (e.g., quiz, discussion post, or assignment submission).

A student who is reported to have never attended class within the posted add/drop period will be administratively removed from the course and the course deleted from their transcript.

After the add/drop period, a student who is confirmed to have stopped attending class may be administratively removed from the course and assigned a grade of "SA" (Stopped Attending). A student is considered to have stopped attending class when they have two consecutive weeks of absences. The course instructor will initiate the Stop Attend process by submitting a Stop Attend form through the Student Portal. Students at risk of being assigned an "SA" grade will be notified by their academic advisor via their Johnson College email. Students may return to the course, but will be automatically assigned an "SA" for a second occurrence of two consecutive weeks of absences.

| **class meets** | 3 times/ week | 2 times/ week | once/ week | online |
|---|---|---|---|---|
| **consecutive absences that initiate the Stop Attend process** | 6 | 4 | 2 | 2 weeks |

An "SA" grade is equivalent to a failing grade. Courses for which an "SA" is assigned must be retaken to fulfill degree requirements.

Students with extenuating circumstances—such as military service, bereavement, extended illness, participation in school functions, or jury duty—should contact their instructors immediately to discuss their situation. Students are responsible for understanding and complying with this policy to maintain their academic standing and financial aid eligibility.

**Class Cancellation**

Instructors are expected to hold all classes at their scheduled days and times and to use the full class period, except in rare or exceptional situations. If the instructor has not arrived within the first 15 minutes of the scheduled start time, the class will be considered canceled.

**Weather / Emergency Notifications**

In the event that in-person classes are delayed or canceled due to inclement weather or other emergencies, notifications will be shared through multiple channels. Students, faculty, and staff can receive alerts via text message by signing up for the Johnson College Campus Alert System:

- Visit www.johnson.edu/campus-alerts,
- Or text "essential" to 79516 for Scranton Campus Alerts,
- Or text "wework" to 79516 for Hazleton Campus Alerts.

In addition to text alerts, weather and emergency updates will be posted on the Johnson College website (www.johnson.edu) and shared on the college's official social media platforms. It is also recommended to monitor local television stations for announcements.

Faculty may require regularly scheduled in-person class meetings and coursework to be completed online when in-person classes are canceled. Students should communicate with faculty in order to ensure course requirements are completed.

In the event there are multiple cancellations of in-person classes during a term, the academic calendar may need to be adjusted to add instructional days.

Online classes will not be canceled due to inclement weather. All online coursework will retain their deadlines regardless of weather conditions.

If a technological emergency results in the Desire2Learn server being down, students will be notified through an announcement on the College's website (www.johnson.edu). Students may sign up for text and/or email notifications at https://www.johnson.edu/campus-alerts/ . Please note, Desire2Learn is not housed on the Johnson College campus; emergencies on campus will have little to no effect on distance education courses.

**Make-up Work**

When students are absent or are unable to complete coursework on schedule, they may be permitted to make up lost time and/or missed work in their academic and/or major courses. It is the responsibility of the student to request consideration for make-up work from the instructor.

**Late Assignment Policy**

Without prior arrangement, late assignments will be accepted with the following conditions:

a) The final grade of the assignment will be reduced by 10% (e.g.- 10 points out of 100) for each calendar day the assignment is submitted late.
b) Late work will not be accepted more than 4 days after the due date and will receive a score of 0.

| | On Time | 1 Day Late | 2 Days Late | 3 Days Late | 4 Days Late | 5 or More Days Late |
|---|---|---|---|---|---|---|
| Maximum Score | 100% | 90% | 80% | 70% | 60% | 0% |

## Academic Standing

Academic standing refers to a student's overall academic performance, as evaluated by the College. It is used to determine whether a student is making satisfactory progress toward the completion of a degree or certificate program. Academic standing at Johnson College is determined by a student's term grade point average (GPA) and career (overall) grade point average (CGPA). The Office of Academics and the Office of the Registrar review term GPA and career GPA for all students at the conclusion of each Fall and Spring term to assign academic standing.

### Good Academic Standing

A student is considered to be in good academic standing when both their term GPA and career GPA are 2.0 or higher.

### Academic Probation

A student whose term GPA or career GPA is less than 2.0 is placed on academic probation for the following term. Students on academic probation are allowed to continue their current enrollment. However, they are required to complete a self-assessment and work with their academic advisor to develop an academic improvement plan. In addition, a hold is placed on the student's account, preventing them from registering for future terms.

At the conclusion of the term on academic probation, the Chief Academic Officer will review the student's academic performance.

- If the student's term GPA and career GPA are both 2.0 or higher, the student will return to good academic standing.
- If the student's term GPA increases to 2.0 or higher, but the career GPA remains less than 2.0, the student will continue on academic probation for the next term.
- If the student's term GPA and career GPA both remain less than 2.0, the student will be academically dismissed from Johnson College.

Students who are academically dismissed will be notified through their Johnson College email and by a letter sent to the mailing address on file with the College. Students who wish to appeal their academic dismissal must complete and submit the Academic Dismissal Appeal Form, available on the Student Portal. Appeals must be submitted within two weeks of the dismissal email notification date.

*Health Science programs (PTA, RAD, & VEN) have separate requirements for maintaining good academic standing within each program. These requirements can be found in each program's handbook.

Academic standing can affect financial aid eligibility. Students on academic probation are encouraged to contact the Financial Aid Office for more information.

## Academic Integrity

The faculty and administration of Johnson College have high regard for the integrity of the educational process; therefore, the College wishes to recognize students not only for their academic skills and dedication but also according to a code of ethical academic behavior.

Ethical academic behavior includes, but is not limited to:

1. Acting at all times with honesty, integrity, and being trustworthy
2. Accepting responsibility for one's work
3. Identifying contributing members of a group, where group work is authorized
4. Citing references, where reference use is required

5. Submitting work that is the sole creation of the student
6. Never contributing to the academic dishonesty of others

Academic dishonesty refers to the commission of, or contribution to, dishonest acts by those engaged in teaching, learning, research, or related academic activities. Academic dishonesty in any form will not be tolerated. Academic dishonesty includes, but is not limited to:

1. Cheating - When a student attempts to gain an advantage or get academic credit in a way that is dishonest, disrespectful, irresponsible, untrustworthy, or unfair. Includes copying from another student's work, unapproved collaboration or group work to complete coursework, taking an exam for another student or asking another student to take an exam for you, or using an answer key to complete coursework.
2. Plagiarism - This occurs when you use another person's words, ideas, assertions, data, or figures without acknowledgment of their work. Includes copying and pasting directly from sources (webpages, Wikipedia, blog posts, journal articles or textbooks, Chat GPT, or other artificial intelligence tools), quoting a source without appropriate citation, or not paraphrasing and/or citing a source properly.
3. Submitting work that does not cite contributing members of the group when working in courses where group work is required
4. Sharing of digital work (flash drives, Google Docs, etc.)
5. Facilitating acts of academic dishonesty by others
6. Tampering with the academic work of others

**Use of Artificial Intelligence (AI) Tools**

The use of artificial intelligence (AI) tools, including but not limited to text generators, image creators, and code assistants, must align with the principles of academic integrity at Johnson College. Faculty have the authority to establish specific guidelines regarding the appropriate use of AI in their courses. These parameters may vary by assignment, assessment, or instructional activity.

The unauthorized or unapproved use of AI tools—particularly in situations where independent work is expected—may be considered a violation of academic integrity and subject to disciplinary action as outlined in this policy. Students are expected to seek clarification from their instructors when the appropriate use of AI tools is unclear.

Students are responsible for understanding what constitutes academic dishonesty and are encouraged to ask instructors if they are unsure whether a particular action violates this policy. Instructors who suspect academic dishonesty will report the incident to the Office of Academics.

Violations of the Academic Integrity Policy may result in one or more of the following consequences:

- First Offense: The student will receive a grade of "F" on the assignment in question.
- Second Offense: The student will receive an automatic failing grade ("F") for the course.
- Third Offense: Referral to the Office of Academics. Disciplinary actions may include dismissal from Johnson College.

Academic Integrity violations are cumulative and tracked throughout the student's academic career at Johnson College.

**Academic Integrity Violation Appeal Process**

Students who have been found in violation of the Academic Integrity Policy have the right to appeal the decision or the resulting disciplinary action. The appeal process ensures fairness and provides an opportunity for the student to present additional information or clarify misunderstandings.

1. **Notification**
   The student will be notified via their Johnson College email of the alleged violation, the evidence, and the consequences or disciplinary action. This notice will come from the instructor and/or the Director of Academics.

2. **Submit an Appeal**
   The student must submit an Academic Integrity Violation Appeal Form (located on the Student Portal) within one week of the date of the violation notice. The content of appeal should include:
   - A clear statement of the reason for the appeal
   - Any supporting evidence or documentation
   - A summary of relevant facts and circumstances

3. **Review**
   The Director of Academics will review all documentation and may request a meeting with the student and/or instructor.

4. **Decision and Notification**
   The Director of Academics will issue a decision within two weeks of receiving the appeal. The decision will be shared via email with the student, instructor, and any relevant academic offices. The decision of the appeal at this stage is final.

   Outcomes of the appeal may include:
   - Upholding the original decision and sanction
   - Reducing or removing the sanction
   - Reversing the academic integrity violation

## Final Grade Appeal

Students may appeal a final course grade if they believe there has been an error or unfair evaluation. Appeals must be initiated in a timely manner and follow the steps outlined below.

1. **Initial Contact with Instructor**
   Within one week of the final grade being posted, the student must contact the course instructor via Johnson College email to request an explanation of how the final grade was determined.
   - The instructor will review the grading details with the student.
   - If a grading error or correction is identified, the instructor will submit a grade change.

2. **Appeal to Program Director**
   If the student is not satisfied with the explanation or outcome from the instructor, they may appeal to the Program Director within one week of receiving the instructor's response.
   - The appeal must be submitted via the student's Johnson College email.
   - The Program Director will review the grade determination with the instructor and then meet with the student to explain the result of the appeal.

3. **Final Appeal to the Chief Academic Officer**
   If the student remains dissatisfied after meeting with the Program Director, they must submit a Final Grade Appeal Form (available on the Student Portal) to the Chief Academic Officer within one week of receiving the Program Director's decision.
   - The submission must include a summary of prior meetings and appeal outcomes, along with a clear rationale for continuing the appeal.
   - The Chief Academic Officer will review the case, consult with the involved parties, and meet with the student to communicate the final decision.

   The decision of the Chief Academic Officer is final.

## Academic Dismissal

Johnson College makes every effort to assist students in achieving their academic goals; however, the College reserves the right to dismiss students due to poor academic performance or violation of the academic code of conduct. An inability to meet the minimum career GPA requirement for two consecutive terms may result in dismissal from the College.

In such cases, the Office of Academics will notify students of their dismissal via:

- Letter of dismissal from the Chief Academic Officer sent to the address on file with the College
- Email sent to the student's Johnson College email address

Dismissed students are responsible for all outstanding financial obligations to the College.

### Academic Dismissal from a Program of Study

The Physical Therapist Assistant, Radiologic Technology, and Veterinary Nursing programs have specific grade point average (GPA) requirements for their major courses. Specific dismissal policies for Physical Therapist Assistant, Radiologic Technology, and Veterinary Nursing students can be found in their respective Programmatic Handbooks.

## Student Grievance Policy

Johnson College strives to address and resolve student concerns fairly and promptly. A grievance is defined as a perceived injustice in which a student believes they were treated unfairly, discriminated against, or in a way that violates College policies, procedures, or applicable laws by an employee of the College.

Grievances may be related to either academic or non-academic matters and can involve faculty, staff, administrators, departments, or programs.

- **Academic Grievance:** The student believes they were treated unfairly within the context of a course.
- **Non-Academic Grievance:** The student believes they were treated unfairly outside of the classroom, in a way that violates College rules, policies, procedures, or laws.

The College maintains both an informal complaint process and a formal grievance process. Students are encouraged to follow these procedures in a timely manner.

### Informal Complaint Process

- **Academic Issues**
  Academic complaints should first be discussed with the course instructor. If no resolution is reached, the student may submit a formal grievance within 30 business days of the incident. A designated faculty or administrative staff member will respond in writing to the student's Johnson College email within 14 business days of receiving the complaint.

- **Non-Academic Issues**
  Students should attempt to resolve the issue directly with the person(s) involved, when appropriate. *(Note: This step is not required for complaints involving sexual harassment, misconduct, or discrimination.)* If informal resolution is unsuccessful, the student may submit a formal grievance within 30 business days of the incident. A designated staff or faculty member will review the complaint and respond in writing to the student's Johnson College email within 14 business days of receiving the complaint.

**Formal Grievance Process**

If a concern cannot be resolved informally, students may submit a Formal Grievance Form, available on the Johnson College website. Formal grievances must be submitted within 30 business days of the outcome of the informal process. A designated staff or faculty member will review the grievance and provide a written decision to the student's College email within 14 business days of receipt.

**Appeal**

A student may appeal the formal grievance decision within 10 business days by submitting an appeal request via email to the Johnson College Grievance Committee at grievance@johnson.edu.

The following information must be included in the student's email to the Grievance Committee:

1. Name and contact information of complainant(s)
2. Detailed description of the appeal
3. Copies of all documents relating to the complaint, including previous decisions and supporting documents
4. Specific reason for the appeal
5. Desired outcome
6. Date the formal grievance was submitted

The committee will have 14 business days to review the information and notify the complainant(s) of the Committee's decision, in writing, to their Johnson College student email address.

**All decisions made by the Johnson College Grievance Committee are final. There is no further appeal within the Student Grievance Procedure Policy.**

The College is committed to addressing student complaints timely and effectively, in accordance with student complaint/grievance procedures. If a student believes their concerns have not been sufficiently addressed, they may also file external complaints with the agencies identified below.

**Student Complaints to the Pennsylvania Department of Education**

Students may file a complaint with the Pennsylvania Department of Education.
Pennsylvania Department of Education – Postsecondary and Adult Education
333 Market Street, 12th Floor
Harrisburg, PA 17126-0333
Phone: 717.783.6788

**Student Complaints to the Middle States Commission on Higher Education**

Students may file a complaint with the Middle States Commission on Higher Education accrediting agency.
Middle States Commission on Higher Education
Telephone: 267-284-5000
Fax: 215-662-5501

**NC-SARA Complaint Process**

The National Council for State Authorization Reciprocity Agreements (NC-SARA) is a private nonprofit organization [501(c)(3)] that helps expand students' access to educational opportunities and ensure more efficient, consistent, and effective regulation of distance education programs. As a SARA-participating institution, Johnson College is committed to providing positive educational experience during distance education learning experiences. The student should begin the complaint process with the institution and if resolution is not found, the student would contact the institution's home state SARA Portal Entity. NC-SARA maintains a directory of SARA State Portal Entities.

**Programmatic Complaint Process**

**Complaint form for Physical Therapist Assistant**
**Process for Reporting Allegations against a JCERT Program**
**Process for Reporting Complaints for the Veterinary Technology Program**
**Johnson College Formal Grievance Form**

## Graduation Requirements

Students must meet the following requirements to be eligible to graduate from Associate Degree programs:

- Successful completion of First-Year Experience (SSS-101)
- Successful completion of academic requirements as outlined in the Johnson College catalog based on time of entry
- Successful completion of a minimum of 60 credits; at least 30 credits of which must be completed at Johnson College
- Minimum career grade point average (CGPA) of 2.00
- Successful completion of clinical/internship for students in Biomedical Equipment Technology, Physical Therapist Assistant, Radiologic Technology and Veterinary Nursing programs
    - Refer to the retention section in the respective program areas for Physical Therapist Assistant, Radiologic Technology and Veterinary Nursing
- Full payment or satisfactory arrangement to fulfill all financial obligations
- Good disciplinary standing (no active conduct investigation or proceedings)
- Submission of a completed Graduation Application form by the stated deadline

Students must meet the following requirements to be eligible to graduate from Certificate programs:

- Successful completion of First-Year Experience (SSS-101)
- Successful completion of academic requirements as outlined in the Johnson College catalog based on time of entry
- Successful completion of a minimum of 30 credits; at least 15 credits of which must completed at Johnson College
- Minimum career grade point average (CGPA) of 2.00
- Full payment or satisfactory arrangement to fulfill all financial obligations
- Good disciplinary standing (no active conduct investigation or proceedings)
- Submission of a completed Graduation Application form by the stated deadline

Students who are within six (6) credits of completing their degree may be eligible to participate in the commencement ceremony. To be considered for this opportunity, students must be registered for the remaining courses needed to fulfill their program requirements.

Johnson College has three degree conferral dates throughout the academic year, one at the end of each fall, spring, and summer term. However, there is only one commencement ceremony, which takes place in May.

- Students completing their degree requirements during Intersession will be conferred at the end of the spring term
- Students completing their degree requirements during session 1 of the summer term will be conferred at the end of the full summer term
    - *If a student needs a letter confirming that degree requirements have been met, please contact the Office of the Registrar*
- In the event an IFT student completes their degree requirements prior to completing their high school diploma, the student will be conferred at the end of the summer term
    - IFT students must provide an official high school transcript to the Enrollment Office once they graduate from their school to be conferred in their degree

## Academic Honors and Recognition

### President's List

The President's List is published at the end of each term citing students who achieved a minimum 3.70 GPA for the term, while carrying a minimum of 12 Johnson College credits and matriculating toward a degree. Students who receive a grade of "W", "F", "SA", or "I" on their transcript for the term do not qualify for the President's List.

### Graduation Honors

Graduating students may earn special recognition for strong academic performance. The students with the highest and second-highest career GPAs are named valedictorian and salutatorian. To be eligible for these honors, students must have completed at least two full-time terms at the College.

Additionally, Johnson College awards Latin honors at graduation to recognize outstanding academic achievement. Honors are based on the student's career GPA and completion of at least 45 credits at Johnson College:

- Summa Cum Laude *(With Highest Honor)* – career GPA of 3.90 to 4.00
- Magna Cum Laude *(With Great Honor)* – career GPA of 3.80 to 3.89
- Cum Laude *(With Honor)* – career GPA of 3.70 to 3.79

Latin honors are determined by the final career GPA in the term in which the student's degree is conferred. Preliminary Latin honors (based on the career GPA as of the fall term prior to degree conferral) may be acknowledged at the commencement ceremony.

## National Honor Societies

### Alpha Beta Kappa

Alpha Beta Kappa is a national honor society open to students who attain a career GPA of 3.50 or higher by the beginning of their last term at Johnson College and who have participated in a student group/organization for at least one term during their time on campus. Eligible groups/organizations include Student Government Association, and/or serving as a peer tutor, or Ambassador. Peer tutors must tutor a minimum of once a week for at least one term. Students are inducted into the Omega of Pennsylvania chapter during a ceremony at Awards Night.

### National Technical Honor Society

The National Technical Honor Society believes in advocating for all skilled career paths and empowering students in seeking skills, building their careers, and the global workforce. To be considered for membership, students must demonstrate how they went above and beyond to contribute to the Johnson College community outside the classroom. Students are required to have a minimum career grade point average of 3.0 at the end of the term prior to graduation. Candidates must also demonstrate integrity and leadership by participating in activities around campus and volunteering in campus wide events.

## Military Students

Johnson College is a Gold rated Military Friendly school. A Military Friendly rating is given to a school or organization that has a commitment, effort and success in creating a beneficial environment for the military community. As part of this rating, Johnson College offers priority registration, a private study room, and

resources, among other benefits, for Military students. Military students are recognized at Awards Night with an honor stole in representation of their Military Service.

## Second Degree

Students who wish to obtain a second degree may do so if they fulfill the requirements shown below. Students must complete all the requirements of their first degree before starting their second degree program requirements.

- Students must apply for and be admitted into the major program in which the second degree is desired by the Enrollment Department.
- Students must meet all of the curriculum requirements of the first and second degree for both major and required courses.
- Students must meet with their advisor and/or the appropriate faculty member(s) of the second degree program to determine the minimum number of credits that need to be completed for the second degree in addition to the credits taken in the first degree program.

## Transfer of Credit to Baccalaureate Institutions

Johnson College has program-specific articulation agreements with the following baccalaureate awarding institutions:

| Articulation Agreement | Johnson College Program | Articulated Program | Website |
|---|---|---|---|
| Bloomsburg University | A.A.S Electronic Engineering Technology | B.S. Electronics Engineering Technology | https://www.bloomu.edu/ |
| Keystone College | A.S. Computer Information Technology | B.S. Computer Science | https://www.keystone.edu/ |
| Kutztown University | A.S. Computer Information Technology | B.S. Information Technology | https://www.kutztown.edu/ |
| Marywood University | A.S. Computer Information Technology | B.S. Computer Science | http://www.marywood.edu/ |
| Marywood University | A.S. Computer Information Technology | B.S. Information Security | http://www.marywood.edu/ |
| Marywood University | A.S. Veterinary Nursing | B.S. Biology | http://www.marywood.edu/ |
| Mount Aloysius College | A.S. Radiologic Technology | B.S. Leadership in Healthcare | https://www.mtaloy.edu/ |
| Mount Aloysius College | A.S. Radiologic Technology | B.S. Medical Imaging | https://www.mtaloy.edu/ |
| Mount Aloysius College | A.S. Physical Therapist Assistant | B.S. Leadership in Healthcare | https://www.mtaloy.edu/ |
| Pennsylvania College of Technology | A.S. Computer Information Technology | B.S. Information Assurance and Cybersecurity | https://www.pct.edu/ |

| | | | |
|---|---|---|---|
| Pennsylvania College of Technology | A.S. Radiologic Technology | B.S. Healthcare Leadership and Administration | https://www.pct.edu/ |
| Pennsylvania College of Technology | A.S. Physical Therapist Assistant | B.S. Healthcare Leadership and Administration | https://www.pct.edu/ |
| Pennsylvania College of Technology | A.A.S. Electrical Construction Technology | B.S. Building Automation Technology | https://www.pct.edu/ |
| Pennsylvania College of Technology | A.A.S. Carpentry and Cabinetmaking Technology | B.S. Residential Construction Technology and Management | https://www.pct.edu/ |
| Pennsylvania College of Technology | A.A.S. Carpentry and Cabinetmaking Technology | B.S. Building Science and Sustainable Design | https://www.pct.edu/ |
| Pennsylvania College of Technology | A.A.S. Architectural Drafting and Design Technology | B.S. Building Science and Sustainable Design | https://www.pct.edu/ |
| St. Matthew's University | A.S. Veterinary Nursing | Doctor of Veterinary Medicine (DVM) | https://www.stmatthews.edu/ |
| University of Missouri | A.S. Veterinary Nursing | B.S. Veterinary Technology | https://missouri.edu/ |
| York College | Core Career Courses | All Programs | https://www.ycp.edu/ |

# GENERAL EDUCATION CURRICULUM

In support of its mission, Johnson College provides all students with industry-focused educational experiences grounded in a general education curriculum that supports critical thinking, makes connections across disciplines, and fosters engagement in the world around them.

The mission of the General Education program and its curriculum at Johnson College is to provide students with skills needed in the real world to develop professional competency through critical thinking and problem solving, written and oral communication, scientific and quantitative reasoning, technological competency and information literacy, and equity and inclusion.

Johnson College is required to provide general education coursework as part of its associate degree program curricular content. General education requirements are completed as part of core career coursework, which may include courses in the student's major program of study.

Johnson College has identified ten areas for general education curricular content that must be completed as part of all associate degree programs.

- Arts (ART)
- Critical analysis and reasoning (CAR)
- Humanities (HUM)
- Information literacy (IL)
- Mathematics (MAT)
- Oral and written communication (COM)
- Science & scientific and quantitative reasoning (SCI, SQR)
- Social sciences (SOC)
- Technology & technological competency (TECH, TC)
- Values, ethics, and diverse perspectives (VED)

**General Education Curriculum Overview**
The General Education program aims to develop students' abilities to lead ethical lives and contribute meaningfully to society. As a key component of the overall college experience, it equips students with essential skills, knowledge, and cultural awareness that support their success in both their academic courses and future careers.

## General Education Curriculum Learning Goals

**Learning Goal #1: Critical Thinking and Problem Solving** - Graduates will think logically and critically by employing reasoning and analysis.

- Graduates will demonstrate the ability to examine opposing sides of arguments and respectfully present one side of the argument as stronger through the use of facts.
- Graduates will evaluate information and ideas in an organized fashion.
- Graduates will develop new ideas, perspectives, and approaches.
- Graduates will utilize information to react to unintended results professionally in order to achieve the desired outcomes.

**Learning Goal #2: Written and Oral Communication** - Graduates will develop effective written and oral communication skills.

- Graduates will be able to create items that have introductions, bodies, and conclusions.
- Graduates will be able to create thesis statements and topic sentences.
- Graduates will demonstrate the ability to use the appropriate citation formats when necessary.
- Graduates will be able to utilize speaking skills effectively when presenting information to others.

**Learning Goal #3: Scientific and Quantitative Reasoning** - Graduates will be able to understand and apply fundamental scientific and mathematical principles.

- Graduates will be able apply the scientific method to examine behavior, cognition, or social influences.
- Graduates will be able to utilize scientific inquiry in their fields.
- Graduates will be able to calculate and interpret different types of data.
- Graduates will solve problems using appropriate formulas.

**Learning Goal #4: Technological Competency and Information Literacy** - Graduates will be able to utilize information technologies to gather information.

- Graduates will be able to operate various functions of course-related software.
- Graduates will be able to utilize various electronic sources to enhance knowledge.
- Graduates will be able to demonstrate ethical use of sources.

**Learning Goal #5: Equity and Inclusion** - Graduates will demonstrate an understanding of inclusion, ethical standards, and the impact of culture on society.

- Graduates will be able to discuss the basic characteristics of the humanities (including literature, art, music, theater, and cinema) in industry.
- Graduates will be able to explain the nature and impact of social inequality, diversity, and inclusion.
- Graduates will be able to examine how biological, cultural, and environmental interactions influence human behavior and cognition.

# PROGRAMS OF STUDY

## Major Programs

The following pages provide descriptions of each major program, including program objectives, learning goals, required courses (scope), and recommended term-by-term course outlines (sequence). The course sequence is designed to meet prerequisite requirements, provide access to courses not offered every term, and support timely program completion. Students are encouraged to follow the recommended sequence as closely as possible to stay on track for graduation within the standard timeframe.

These sequences are based on students beginning their program in the fall term. Johnson College understands that not all students begin in the fall or can follow the exact course sequence. Students who start in spring or summer, or who need to deviate from the sequence, should consult their academic advisor or program director for guidance.

Students are responsible for following the curriculum outlined in their advising sheet and should work closely with their academic advisor and program director to ensure all graduation requirements are met.

# Architectural Drafting and Design Technology (AAS)

## Program Objective

The Architectural Drafting and Design Technology program prepares students as entry-level technicians in computer-assisted drafting (CAD) and Building Information Modeling (BIM) for residential and commercial construction. Students will work and learn in all areas of architectural design and drafting. Instruction and hands-on learning include all phases of building design drafting, print reading, cost estimating, specifications writing and sustainability concepts.

## Career Opportunities

Graduates work as designers, computer drafting technicians, construction estimators, architects' representatives, engineering technicians, facility management technicians and field construction inspectors.

Typical employers in the architectural career field are residential, commercial, and industrial contractors and land developers; architectural design firms, civil design firms, and structural engineering companies; modular and mobile home builders; facilities management companies; real estate developers; and government design agencies.

## Program Learning Goals

**Goal 1:** Graduates will acquire the skills necessary to obtain an entry-level position in the design field.

**Student Learning Outcomes** - Students will:

- Accurately draw architectural drawings
- Interpret architectural drawings and sketches
- Coordinate design skills to complete projects

**Goal 2:** Graduates will demonstrate professional behavior and ethics in order to meet the challenges of work within their field.

**Student Learning Outcomes** - Students will:

- Work in a team environment
- Be willing to learn new skills

**Goal 3:** Graduates will acquire critical thinking and decision making skills.

**Student Learning Outcomes** - Students will:

- Make project decisions based on design skills, codes and ordinances
- Organize and prioritize projects

## Architectural Drafting and Design Technology

### 2025-2026 Program Scope

| **Program Requirements** | | **Total: 44** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ADT-153 | Residential Planning | 2 |
| ADT-154 | Residential Planning Lab | 2 |
| ADT-155 | Project Estimating | 3 |
| ADT-240 | Technical Sketching | 3 |
| ADT-251 | Building Information Modeling, Residential | 2 |
| ADT-252 | Building Information Modeling, Residential Lab | 2 |
| ADT-253 | Codes and Ordinances | 3 |
| ADT-255 | Specifications | 3 |
| ADT-257 | Building Information Modeling, Commercial | 2 |
| ADT-258 | Building Information Modeling, Commercial Lab | 2 |
| BTT Elective | Building Trades Elective | 3 |
| BTT-OSHA | OSHA 10 Construction Safety Certification | 0 |
| BUS-110 | Business Research and Report Writing | 3 |
| CDT-101 | Introduction to Civil Design | 3 |
| CDT-124 | Construction Materials and Management | 3 |
| INT-299B | Internship (100 hours) | 2 |
| MAT-110 | Trigonometry | 3 |
| SCI-160 | Sustainability Design | 3 |

| **Core Career** | | **Total: 25** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-110 (ART) | Contract Drawings | 3 |
| COM-112 (COM) | Public Speaking | 3 |
| Elective (COM) | Communications Elective | 3 |
| ADT-263 (HUM) | Architectural History | 3 |
| MAT-101 (MAT) | College Algebra and Trigonometry | 3 |
| PHY-203 (SCI) | Statics and Strength of Materials | 3 |
| BUS-101 (SOC) | Introduction to Business | 3 |
| ADT-151 (TECH | Introduction to Computer Assisted Drafting (CAD) | 2 |
| ADT-152 (TECH) | Introduction to Computer Assisted Drafting (CAD) Lab | 2 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **ADT Program Total** | **70** |
|---|---|

## Architectural Drafting and Design Technology

### 2025-2026 Program Sequence

| Term 1 (Fall) | | Credits: 17 |
|---|---|---|
| ADT-151 | Introduction to Computer Assisted Drafting (CAD) | 2 |
| ADT-152 | Introduction to Computer Assisted Drafting (CAD) Lab | 2 |
| ART-110 | Contract Drawings | 3 |
| BTT-OSHA | OSHA 10 Construction Safety Certification | 0 |
| CDT-101 | Introduction to Civil Design | 3 |
| COM Elective | Communications Elective | 3 |
| MAT-101 | College Algebra and Trigonometry | 3 |
| SSS-101 | First-Year Experience | 1 |

| Term 2 (Spring) | | Credits: 19 |
|---|---|---|
| ADT-153 | Residential Planning | 2 |
| ADT-154 | Residential Planning Lab | 2 |
| ADT-155 | Project Estimating | 3 |
| ADT-240 | Technical Sketching | 3 |
| COM-112 | Public Speaking | 3 |
| MAT-110 | Trigonometry | 3 |
| PHY-203 | Statics and Strength of Materials | 3 |

| Term 3 (Fall) | | Credits: 16 |
|---|---|---|
| ADT-251 | Building Information Modeling, Residential | 2 |
| ADT-252 | Building Information Modeling, Residential Lab | 2 |
| ADT-253 | Codes and Ordinances | 3 |
| ADT-263 | Architectural History | 3 |
| BUS-101 | Introduction to Business | 3 |
| CDT-124 | Construction Materials and Management | 3 |

| Term 4 (Spring) | | Credits: 18 |
|---|---|---|
| ADT-255 | Specifications | 3 |
| ADT-257 | Building Information Modeling, Commercial | 2 |
| ADT-258 | Building Information Modeling, Commercial Lab | 2 |
| BTT Elective | Building Trades Elective | 3 |
| BUS-110 | Business Research and Report Writing | 3 |
| SCI-160 | Sustainability Design | 3 |
| INT-299B | Internship | 2 |

# Automotive Technology (AAS)

## Program Objective

The Automotive Technology program prepares students as entry-level technicians in the automobile industry.

## Career Opportunities

Graduates can work for employers in the automotive career fields of automotive service centers; engine repair/machine shops; automotive equipment distributors; independent service garages; automotive parts manufacturers; sales representation; and auto insurance companies. Graduates may work with brake systems, transmissions, alignments and repairs; be representatives in claim, sales and service, or become truck/fleet maintenance technicians.

## Program Learning Goals

**Goal 1:** Graduates will possess the appropriate skills needed for entering the Automotive Technology field.

**Student Learning Outcomes** - Students will:

- Identify tools necessary to perform job duties
- Demonstrate ability to perform basic automobile services
- Practice Safe work habits for all jobs performed

**Goal 2:** Graduates will understand the importance of professional behavior, as well as comply with the daily changes within the Automotive Industry and will meet the challenges of continued growth within the Automotive Technology Profession.

**Student Learning Outcomes** - Students will:

- Interpret basic repair instructions
- Follow diagnostic flow charts to properly diagnose problems
- Take basic skills to the next level with on the job training

**Goal 3:** Graduates will be provided the skills that will allow them to choose careers in the field.

**Student Learning Outcomes** - Students will:

- Be able to become electrical systems specialists
- Recognize the importance of customer satisfaction in automotive service
- Be able to apply their automotive knowledge to become Parts Specialists

## Automotive Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 43** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| AUT-151 | Introduction to Vehicle Maintenance & Repair Technology | 2 |
| AUT-153 | Brake Systems | 1 |
| AUT-154 | Brake Systems Lab | 2 |
| AUT-155 | Steering and Suspension Systems | 1 |
| AUT-156 | Steering and Suspension Systems Lab | 2 |
| AUT-157 | Introduction to Welding for Automotive Students | 2 |
| AUT-159 | Electrical and Electronic Systems | 1 |
| AUT-160 | Electrical and Electronic Systems Lab | 2 |
| AUT-161 | Engine Performance and Emissions | 1 |
| AUT-162 | Engine Performance and Emissions Lab | 2 |
| AUT-163 | Internal Combustion Engine Fundamentals | 1 |
| AUT-164 | Internal Combustion Engine Fundamentals Lab | 2 |
| AUT-253 | Certifications for Automotive Students | 2 |
| AUT-261 | Gasoline Engine Overhaul Procedures | 2 |
| AUT-262 | Gasoline Engine Overhaul Procedures Lab | 2 |
| AUT-263 | Advanced Automotive Electrical Technology | 1 |
| AUT-264 | Advanced Automotive Electrical Technology Lab | 2 |
| AUT-265 | Automotive Transmissions and Transaxles | 1 |
| AUT-266 | Automotive Transmissions and Transaxles Lab | 2 |
| AUT-267 | Manual Transmissions and Differentials | 1 |
| AUT-268 | Manual Transmissions and Differentials Lab | 2 |
| AUT-269/270<br>**OR** INT-299D | Applied Automotive Principles and Applications<br>**OR** Internship (200 hours) | 4 |
| DAS-201 | Driver Assistance Systems | 2 |
| VMR-251 | HVAC Vehicle Systems | 2 |
| VMR-252 | HVAC Vehicle Systems Lab | 1 |

| **Core Career** | | **Total: 21** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| Elective (ART) | Art Elective | 3 |
| Elective (COM) | Communications Elective | 3 |
| Elective (HUM) | Humanities Elective | 3 |
| Elective (MAT) | Mathematics Elective | 3 |
| Elective (SCI) | Science Elective | 3 |
| BUS-101 (SOC) | Introduction to Business | 3 |
| CPT-101 (TECH) | Microcomputer I | 3 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **AUT Program Total** | **65** |
|---|---|

# Automotive Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 14** |
|---|---|---|
| AUT-151 | Introduction to Vehicle Maintenance & Repair Technology | 2 |
| AUT-153 | Brake Systems | 1 |
| AUT-154 | Brake Systems Lab | 2 |
| AUT-155 | Steering and Suspension Systems | 1 |
| AUT-156 | Steering and Suspension Systems Lab | 2 |
| AUT-157 | Introduction to Welding for Automotive Students | 2 |
| CPT-101 | Microcomputers I | 3 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 18** |
|---|---|---|
| AUT-159 | Electrical and Electronic Systems | 1 |
| AUT-160 | Electrical and Electronic Systems Lab | 2 |
| AUT-161 | Engine Performance and Emissions | 1 |
| AUT-162 | Engine Performance and Emissions Lab | 2 |
| AUT-163 | Internal Combustion Engine Fundamentals | 1 |
| AUT-164 | Internal Combustion Engine Fundamentals Lab | 2 |
| BUS-101 | Introduction to Business | 3 |
| COM Elective | Communications Elective | 3 |
| MAT Elective | Mathematics Elective | 3 |

| **Term 3 (Fall)** | | **Credits: 16** |
|---|---|---|
| ART Elective | Art Elective | 3 |
| AUT-261 | Gasoline Engine Overhaul Procedures | 2 |
| AUT-262 | Gasoline Engine Overhaul Procedures Lab | 2 |
| AUT-263 | Advanced Automotive Electrical Technology | 1 |
| AUT-264 | Advanced Automotive Electrical Technology Lab | 2 |
| AUT-265 | Automotive Transmissions and Transaxles | 1 |
| AUT-266 | Automotive Transmissions and Transaxles Lab | 2 |
| HUM Elective | Humanities Elective | 3 |

| **Term 4 (Spring)** | | **Credits: 17** |
|---|---|---|
| AUT-253 | Certifications for Automotive Students | 2 |
| AUT-267 | Manual Transmissions and Differentials | 1 |
| AUT-268 | Manual Transmissions and Differentials Lab | 2 |
| AUT-269/270<br>**OR** INT-299D | Applied Automotive Principles and Applications<br>**OR** Internship | 4 |
| DAS-201 | Driver Assistance Systems | 2 |
| VMR-251 | HVAC Vehicle Systems | 2 |
| VMR-252 | HVAC Vehicle Systems Lab | 1 |
| SCI Elective | Science Elective | 3 |

# Aviation Technology (AAS)

## Program Objective

The Aviation Technology program prepares students as entry-level technicians with the latest information on diagnosis, repair procedures, preventive maintenance, and necessary safety applications in aviation technology. The Aviation Technology program provides students the knowledge and skills outlined in the Federal Aviation Administration's (FAA) Mechanics Airman Certification Standard (ACS). The program prepares students to take the FAA licensure exam for general, airframe, and powerplant knowledge. Students will diagnose, adjust, repair, and overhaul aircraft engines and assemblies, landing gear systems, and electrical systems.

## Career Opportunities

Graduates of the program typically find jobs as aircraft maintenance technicians, aircraft mechanics, aircraft restorers, airframe and powerplant mechanics (A&P Mechanics), or helicopter mechanics. Graduates can work in general aviation or manufacturing of aircraft components, for a commercial airline, aircraft manufacturer, private company, museum or historical restoration company, or as an entrepreneur.

## Program Learning Goals

**Goal 1:** Graduates will possess the appropriate skills and safety awareness necessary for entry-level employment in the aviation maintenance field.

**Student Learning Outcomes** - Students will:

- Practice safety in all aspects of classroom, lab, and field experiences
- Read and interpret maintenance manuals, service bulletins, and other specifications to determine the feasibility and method of repairing or replacing malfunctioning or damaged components
- Maintain repair logs, documenting all preventive and corrective aircraft maintenance
- Modify aircraft structures, space vehicles, systems, or components, following drawings, schematics, charts, engineering orders, and technical publications
- Maintain, repair, and rebuild aircraft structures, functional components, and parts, such as wings and fuselage, rigging, hydraulic units, oxygen systems, fuel systems, electrical systems, gaskets, or seals
- Examine and inspect aircraft components, including landing gear, hydraulic systems, and deicers to locate cracks, breaks, leaks, or other problems
- Use critical thinking skills to troubleshoot mechanical and electrical problems associated with various aircraft

**Goal 2:** Graduates will gain an understanding of the requirements and responsibilities of being a certificated Federal Aviation Administration's Airframe & Powerplant Mechanic

**Student Learning Outcomes -** Students will:

- Communicate with managers, supervisors, or company owners in a professional and technical manner
- Demonstrate timely arrival and readiness for work
- Demonstrate legal and ethical personal and professional behavior

**Goal 3:** Graduates will gain the knowledge and skills outlined in the Federal Aviation Administration Airman Certification Standards required to become a FAA-Certificated Airframe & Powerplant Mechanic.

**Student Learning Outcomes** - Students will:

- Successfully complete required coursework to challenge the Federal Aviation Administration licensure written, oral, and practical skills exams
- Challenge all attempted Federal Aviation Administration licensure exams within 60 days of graduation
- Pass all attempted Federal Aviation Administration licensure exams within 12 months of graduation

## Aviation Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 55** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| AVT-104 | Weight & Balance Lab | 1 |
| AVT-105 | Aircraft Materials, Hardware & Processes | 1 |
| AVT-106 | Aircraft Materials, Hardware & Processes Lab | 2 |
| AVT-107 | Regulations, Inspection Techniques and Forms | 2 |
| AVT-108 | Aircraft Regulations Lab | 2 |
| AVT-110 | Aircraft Physics and Math Lab | 1 |
| AVT-211 | Aircraft Metallic Structures | 2 |
| AVT-212 | Aircraft Metallic Structures Lab | 2 |
| AVT-213 | Aircraft Non-Metallic Structures | 1 |
| AVT-214 | Aircraft Non-Metallic Structures Lab | 1 |
| AVT-215 | Aircraft Controls, Airframe Inspection and Systems | 1 |
| AVT-216 | Aircraft Controls, Airframe Inspection and Systems Lab | 2 |
| AVT-217 | Airframe Environmental, Instrument Lighting, and Water Systems | 2 |
| AVT-218 | Airframe Environmental, Instrument Lighting, and Water Systems Lab | 2 |
| AVT-219 | Airframe Fuel, Electrical, Ice, and Fire Control Systems | 2 |
| AVT-220 | Airframe Fuel, Electrical, Ice, and Fire Control Systems Lab | 3 |
| AVT-221 | Aircraft Reciprocating Engines | 3 |
| AVT-222 | Aircraft Reciprocating Engines Lab | 3 |
| AVT-223 | Aircraft Turbine Engines | 3 |
| AVT-224 | Aircraft Turbine Engines Lab | 3 |
| AVT-225 | Aircraft Engine, Fire Protection, and Electrical Systems | 2 |
| AVT-226 | Aircraft Engine, Fire Protection, and Electrical Systems Lab | 3 |
| AVT-227 | Aircraft Engine Lubrication, Ignition, Starting, Induction and Fuel Systems | 2 |
| AVT-228 | Aircraft Engine Lubrication, Ignition, Starting, Induction and Fuel Systems Lab | 3 |
| AVT-229 | Aircraft Engine Air, Exhaust, and Reverser Systems | 2 |
| AVT-230 | Aircraft Engine Air, Exhaust, and Reverser Systems Lab | 2 |
| AVT-231 | Aircraft Propellers | 1 |
| AVT-232 | Aircraft Propellers Lab | 1 |

| **Core Career** | | **Total: 20** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-127 (ART) | Computer Aided Design | 3 |
| ENG-105 (COM) | Industry Communication | 3 |
| CSM-105 (HUM) | Customer Service and Our World | 3 |
| MAT-101 (MAT) | College Algebra I and Trigonometry | 3 |
| AVT-101 (SCI) | Fundamentals of Electricity and Electronics | 3 |
| BUS-101 (SOC) | Introduction to Business | 3 |
| AVT-102 (TECH) | Fundamentals of Electricity and Electronics Lab | 2 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **AVT Program Total** | **76** |
|---|---|

# Aviation Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 16** |
|---|---|---|
| ART-127 | Computer Aided Design | 3 |
| AVT-101 | Fundamentals of Electricity and Electronics | 3 |
| AVT-102 | Fundamentals of Electricity and Electronics Lab | 2 |
| AVT-104 | Weight & Balance Lab | 1 |
| AVT-105 | Aircraft Materials, Hardware & Processes | 1 |
| AVT-106 | Aircraft Materials, Hardware & Processes Lab | 2 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 17** |
|---|---|---|
| AVT-107 | Regulations, Inspection Techniques and Forms | 2 |
| AVT-108 | Aircraft Regulations Lab | 2 |
| AVT-110 | Aircraft Physics and Math Lab | 1 |
| AVT-211 | Aircraft Metallic Structures | 2 |
| AVT-212 | Aircraft Metallic Structures Lab | 2 |
| AVT-213 | Aircraft Non-Metallic Structures | 1 |
| AVT-214 | Aircraft Non-Metallic Structures Lab | 1 |
| AVT-215 | Aircraft Controls, Airframe Inspection and Systems | 1 |
| AVT-216 | Aircraft Controls, Airframe Inspection and Systems Lab | 2 |
| ENG-105 | Industry Communication | 3 |

| **Term 3 (Summer)** | | **Credits: 7** |
|---|---|---|
| AVT-217 | Airframe Environmental, Instrument Lighting, and Water Systems | 2 |
| AVT-218 | Airframe Environmental, Instrument Lighting, and Water Systems Lab | 2 |
| CSM-105 | Customer Service and Our World | 3 |

| **Term 4 (Fall)** | | **Credits: 17** |
|---|---|---|
| AVT-219 | Airframe Fuel, Electrical, Ice, and Fire Control Systems | 2 |
| AVT-220 | Airframe Fuel, Electrical, Ice, and Fire Control Systems Lab | 3 |
| AVT-221 | Aircraft Reciprocating Engines | 3 |
| AVT-222 | Aircraft Reciprocating Engines Lab | 3 |
| AVT-223 | Aircraft Turbine Engines | 3 |
| AVT-224 | Aircraft Turbine Engines Lab | 3 |

| **Term 5 (Spring)** | | **Credits: 19** |
|---|---|---|
| AVT-225 | Aircraft Engine, Fire Protection, and Electrical Systems | 2 |
| AVT-226 | Aircraft Engine, Fire Protection, and Electrical Systems Lab | 3 |
| AVT-227 | Aircraft Engine Lubrication, Ignition, Starting, Induction and Fuel Systems | 2 |
| AVT-228 | Aircraft Engine Lubrication, Ignition, Starting, Induction and Fuel Systems Lab | 3 |
| AVT-229 | Aircraft Engine Air, Exhaust, and Reverser Systems | 2 |
| AVT-230 | Aircraft Engine Air, Exhaust, and Reverser Systems Lab | 2 |
| AVT-231 | Aircraft Propellers | 1 |
| AVT-232 | Aircraft Propellers Lab | 1 |
| BUS-101 | Introduction to Business | 3 |

# Biomedical Equipment Technology (AAS)

## Program Objective

The Biomedical Equipment Technology program prepares students as entry-level biomedical technicians with skills training that include medical terminology and human physiology principles, as well as the maintenance and support, planning and acquisition, and installation of medical equipment according to standards and guidelines.

## Career Opportunities

Graduates work as technicians and sales representatives in the field of Healthcare Technology Management (HTM). Typical employers in this field are hospitals; medical centers; contract maintenance firms; dental, medical, and optical facilities; computer, electronic and medical instrumentation manufacturers.

## Program Learning Goals

**Goal 1:** Students will achieve, through study and hands-on learning, the skills necessary to obtain an entry-level Biomedical Technician position when they graduate.

**Student Learning Outcomes** - Students will:

- Demonstrate the professionalism, knowledge, skills and abilities (KSA's) required of a BMET while completing a 200 hour biomedical internship
- Acquire the broad knowledge necessary for success as a Biomedical Technician in their core (EET and BET) freshman and sophomore studies
- Demonstrate competency in routine biomedical maintenance tasks by the end of their final term

**Goal 2:** Students will prove their knowledge of and ability to perform many equipment management tasks required in the Healthcare Technology Management (HTM) field prior to graduation.

**Student Learning Outcomes** - Students will:

- Demonstrate skills in using a computerized medical maintenance software system through successfully completing assigned labs that include inventory, work order generation and completion, and preventative maintenance scheduling
- Demonstrate competence in HTM tasks such as completing acceptance inspections for new equipment, determining preventative maintenance requirements, rating a device's risk level depending on equipment function and location within the healthcare environment, etc.

**Goal 3:** Students will prove competence with biomedical test equipment and basic testing techniques on common medical devices through hands-on competency tests.

**Student Learning Outcomes** - Students will:

- Demonstrate skills with specialized biomedical test equipment by passing the Capstone Practical Test with a grade of 80% or higher
- Demonstrate knowledge and skills required to verify performance per manufacturer's specifications of several selected medical devices by passing the Capstone Practical Test with a grade of 80% or higher

## Special Enrollment Requirements

Prior to the start of the first term, students must provide proof of a criminal background check and hepatitis B vaccination. Proof of a PPD two-step testing (TB test) is required prior to the start of the student's second year.

**Internship**

A 200 hour internship at an approved site may be completed after a student has completed 30 credits and receives approval from the Program Director. Students are required to complete an internship, and must satisfy the internship requirements of both Johnson College and the internship provider as a condition of graduation. Students must have a career GPA of 2.00 to meet the minimum qualification for internship through Johnson College. Some internship sites may require students to obtain a higher GPA in their agreement.

Many internship sites require proof of current health care coverage, criminal, child abuse and FBI background checks, and/or drug and nicotine tests. Internship sites may bar students from an internship if a criminal record exists or a drug/nicotine test has a positive result. Johnson College cannot guarantee internship placement. Costs for travel to and from an internship site are the responsibility of the student. The schedule for meeting the requirements of this experience will be arranged between the student, faculty member and internship site.

## Biomedical Equipment Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 44** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| BET-231 | Medical Equipment Standards and Testing | 2 |
| BET-232 | Medical Equipment Standards and Testing Lab | 2 |
| BET-233 | Physiological Monitoring Devices | 2 |
| BET-234 | Physiological Monitoring Devices Lab | 2 |
| BET-235 | Life Support Systems | 2 |
| BET-236 | Life Support Systems Lab | 2 |
| BET-237 | Specialized Medical Systems | 2 |
| BET-238 | Specialized Medical Systems Lab | 1 |
| BET-299 | Internship | 4 |
| BIO-105 | Physiology and Anatomy | 3 |
| CIT-183 | Network Architectures, Principles, and Protocols | 2 |
| CIT-184 | Network Architectures, Principles, and Protocols Lab | 1 |
| EET-101 | Introduction to Electronic Equipment | 1 |
| EET-163 | Alternating Current and Passive Devices | 2 |
| EET-164 | Alternating Current and Passive Devices Lab | 1 |
| EET-165 | Digital Electronics | 2 |
| EET-166 | Digital Electronics Lab | 2 |
| EET-167 | Introduction to Semiconductors | 2 |
| EET-168 | Introduction to Semiconductors Lab | 1 |
| EET-169 | Integrated Circuits and Thyristors | 2 |
| EET-170 | Integrated Circuits and Thyristors Lab | 1 |
| MEC-103 | Project Management | 2 |
| PHY-101 | Introductory Physics | 3 |

| **Core Career** | | **Total: 22** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| Elective (ART) | Art Elective | 3 |
| COM-112 (COM) | Public Speaking | 3 |
| ENG-105 (HUM) | Industry Communication | 3 |
| MAT-110 (MAT) | Trigonometry | 3 |
| CHM-101 (SCI) | Fundamentals of Chemistry | 3 |
| CHM-102 (SCI) | Fundamentals of Chemistry Lab | 1 |
| CSM-105 (SOC) | Customer Service and Our World | 3 |
| EET-161 (TECH) | DC Electricity and Instrumentation | 2 |
| EET-162 (TECH) | DC Electricity and Instrumentation Lab | 1 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **BET Program Total** | **67** |
|---|---|

# Biomedical Equipment Technology

## 2025-2026 Program Sequence

| Term 1 (Fall) | | Credits: 17 |
|---|---|---|
| CHM-101 | Fundamentals of Chemistry | 3 |
| CHM-102 | Fundamentals of Chemistry Lab | 1 |
| EET-101 | Introduction to Electronic Equipment | 1 |
| EET-161 | DC Electricity and Instrumentation | 2 |
| EET-162 | DC Electricity and Instrumentation Lab | 1 |
| EET-163 | Alternating Current and Passive Devices | 2 |
| EET-164 | Alternating Current and Passive Devices Lab | 1 |
| MAT-110 | Trigonometry | 3 |
| MEC-103 | Project Management | 2 |
| SSS-101 | First Year Experience | 1 |

| Term 2 (Spring) | | Credits: 19 |
|---|---|---|
| BIO-105 | Physiology and Anatomy | 3 |
| ENG-105 | Industry Communication | 3 |
| EET-165 | Digital Electronics | 2 |
| EET-166 | Digital Electronics Lab | 2 |
| EET-167 | Introduction to Semiconductors | 2 |
| EET-168 | Introduction to Semiconductors Lab | 1 |
| EET-169 | Integrated Circuits and Thyristors | 2 |
| EET-170 | Integrated Circuits and Thyristors Lab | 1 |
| PHY-101 | Introductory Physics | 3 |

| Term 3 (Fall) | | Credits: 14 |
|---|---|---|
| BET-231 | Medical Equipment Standards and Testing | 2 |
| BET-232 | Medical Equipment Standards and Testing Lab | 2 |
| BET-233 | Physiological Monitoring Devices | 2 |
| BET-234 | Physiological Monitoring Devices Lab | 2 |
| CIT-183 | Network Architectures, Principles, and Protocols | 2 |
| CIT-184 | Network Architectures, Principles, and Protocols Lab | 1 |
| CSM-105 | Customer Service and Our World | 3 |

| Term 4 (Spring) | | Credits: 13 |
|---|---|---|
| ART Elective | Art Elective | 3 |
| BET-235 | Life Support Systems | 2 |
| BET-236 | Life Support Systems Lab | 2 |
| BET-237 | Specialized Medical Systems | 2 |
| BET-238 | Specialized Medical Systems Lab | 1 |
| COM-112 | Public Speaking | 3 |

| Term 5 (Summer) | | Credits: 4 |
|---|---|---|
| BET-299 | Internship | 4 |

# Carpentry and Cabinetmaking Technology (AAS)

## Program Objective

The Carpentry and Cabinetmaking Technology program prepares students as entry-level trades people in the layout, estimation, and construction of residential construction including the installation of trim, furniture, stairs and cabinets. The skill set would also include weatherization installers and technicians and conservation retrofitters. Leadership and management skills are stressed. Students work with industry standard tools and equipment such as table saws, jointers, power tools, hand tools, pneumatic nailers, and laser levels.

## Career Opportunities

Graduates work as rough and finish carpenters, cabinetmakers, mill workers, building product representatives, and custom woodworkers. Typical employers in the carpentry and cabinetmaking career field are residential, commercial, and industrial construction companies; remodeling contractors; cabinet and showcase manufacturers; mill-work companies and lumber yards; wholesale and retail building product suppliers; modular home manufacturers; large institutional, business, and industrial complexes; and architectural engineering firms.

## Program Learning Goals

**Goal 1:** The carpentry and cabinet making program will prepare the student for entry level employment in a variety of fields of construction.

**Student Learning Outcomes** – Students will:

- Identify different construction materials
- Select and use appropriate power tools for specific project
- Produce and interpret cabinet shop drawings
- Become familiar with reading a tape measure
- Learn the importance of being on time and ready to work
- Have the opportunity to participate in an internship to gain real-world experience

**Goal 2:** The program will cover residential construction from the “ground to the clouds” and does so with an emphasis on safety first.

**Student Learning Outcomes** – Students will:

- Observe job site, shop safety and tool safety practices
- Safely work with scaffolding and ladders
- Repair tools and power cords to keep the jobsite safe
- Demonstrate the ability to frame walls, floors and roofs

**Goal 3:** The graduate can examine the pre-planning phases of construction through project completion and apply sound customer relation practices.

**Student Learning Outcomes** – Students will:

- Accurately provide residential estimates
- Propose and interpret appropriate plans based on building site layouts
- Learn basic communication skills to help with customer relations

**Goal 4:** The program will teach students the proper construction of kitchen cabinets.

**Student Learning Outcomes** – Students will:

- Construct cabinet doors
- Layout and cut material for face frames
- Construct cabinet carcasses and attach face frames

## Carpentry and Cabinetmaking Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 40** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ADT-151 | Introduction to Computer-Assisted Design (CAD) | 2 |
| ADT-152 | Introduction to Computer-Assisted Design (CAD) Lab | 2 |
| ADT-155 | Project Estimating | 3 |
| ART-103 | Introduction to Print Reading and Shop Drawings | 1 |
| BTT Elective<br>**OR** INT-299C | Construction Elective<br>**OR** Internship (150 hours) | 3 |
| BTT-OSHA | OSHA 10 Construction Safety Certification | 0 |
| CCM-153 | Woodworking Hand and Power Tools | 5 |
| CCM-169 | Cabinet and Component Construction | 5 |
| CCM-231 | Site Layout, Foundations, and Framing Principles | 5 |
| CCM-233 | Interior and Exterior Finishes | 5 |
| CCM-235 | Roof Framing and Stair Building | 5 |
| MAT-110 | Trigonometry | 3 |
| MAT-123 | Math for Carpenters | 1 |

| **Core Career** | | **Total: 21** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-110 (ART) | Contract Drawings | 3 |
| COM-112 (COM) | Public Speaking | 3 |
| Elective (HUM) | Humanities Elective (ENG-105 or ENT-101) | 3 |
| MAT-101 (MAT) | College Algebra I and Trigonometry | 3 |
| Elective (SCI) | Science Elective (SCI-120, SCI-150, or SCI-160) | 3 |
| Elective (SOC) | Social Science Elective (BUS-101 or CSM-105) | 3 |
| Elective (TECH) | Technology Elective (ART-125/126 or CPT-101) | 3 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **CCM Program Total** | **62** |
|---|---|

# Carpentry and Cabinetmaking Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 16** |
|---|---|---|
| ART-110 | Contract Drawings | 3 |
| BTT-OSHA | OSHA 10 Construction Safety Certification | 0 |
| CCM-153 | Woodworking Hand and Power Tools | 5 |
| Elective (SOC) | Social Science Elective (BUS-101 or CSM-105) | 3 |
| Elective (TECH) | Technology Elective (ART-125/126 or CPT-101) | 3 |
| MAT-123 | Math for Carpenters | 1 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 15** |
|---|---|---|
| ART-103 | Introduction to Print Reading and Shop Drawings | 1 |
| CCM-169 | Cabinet and Component Construction | 5 |
| Elective (HUM) | Humanities Elective (ENG-105 or ENT-101) | 3 |
| MAT-101 (MAT) | College Algebra I and Trigonometry | 3 |
| Elective (SCI) | Science Elective (SCI-120, SCI-150, or SCI-160) | 3 |

| **Term 3 (Fall)** | | **Credits: 17** |
|---|---|---|
| ADT-151 | Introduction to Computer-Assisted Design (CAD) | 2 |
| ADT-152 | Introduction to Computer-Assisted Design (CAD) Lab | 2 |
| CCM-231 | Site Layout, Foundations, and Framing Principles | 5 |
| CCM-233 | Interior and Exterior Finishes | 5 |
| MAT-110 | Trigonometry | 3 |

| **Term 4 (Spring)** | | **Credits: 14** |
|---|---|---|
| ADT-155 | Project Estimating | 3 |
| BTT Elective<br>**OR** INT-299C | Construction Elective<br>**OR** Internship (150 hours) | 3 |
| CCM-235 | Roof Framing and Stair Building | 5 |
| COM-112 (COM) | Public Speaking | 3 |

# Civil Design Technology (AAS)

## Program Objective

The Civil Design Technology program prepares students as entry-level technicians in the field of civil engineering. This program provides the foundation for applying basic engineering principles and technical skills in support of civil engineers engaged in designing and executing public works projects such as highways, dams, bridges, tunnels and other facilities. The program also emphasizes professional interpersonal skills.

## Career Opportunities

Graduates work as civil designers, CAD technicians, survey technicians, design engineering technicians, or similar roles in the civil engineering industry. Typical employers in the civil design career field are civil design and engineering firms, structural engineering companies, environmental engineering firms, surveyors, consulting firms, construction companies, and government design agencies.

## Program Learning Goals

**Goal 1:** Graduates will acquire the skills necessary to obtain an entry-level position in the civil design field.

**Student Learning Outcomes** - Students will:

- Demonstrate proficiency with design software such as AutoCAD, Advance Steel, GIS, and Civil 3D
- Interpret maps and surveys
- Calculate stormwater hydrology and structural analysis/design
- Create civil engineering plans and details
- Have skills needed to be engaged with industries or government agencies that design, construct, and maintain civil engineering structures

**Goal 2:** Graduates will demonstrate professional behavior and ethics in order to meet the challenges of work within their field.

**Student Learning Outcomes** - Students will:

- Work in a team environment
- Acknowledge diversity as a benefit to all organizations
- Practice professionalism through consideration and respect for others

**Goal 3:** Graduates will acquire critical thinking and decision-making skills.

**Student Learning Outcomes** - Students will:

- Analyze various components of project requirements to develop design solutions
- Make project decisions based on design skills and knowledge of environmental inputs
- Effectively use software to help solve industry challenges

## Civil Design Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 46** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ADT-153 | Residential Planning | 2 |
| ADT-154 | Residential Planning Lab | 2 |
| ADT-155 | Project Estimating | 3 |
| ADT-240 | Technical Sketching | 3 |
| BTT Elective | Building Trades Elective | 3 |
| BUS-110 | Business Research and Report Writing | 3 |
| CDT-101 | Introduction to Civil Design | 3 |
| CDT-121 | Civil 3D I | 2 |
| CDT-122 | Civil 3D I Lab | 2 |
| CDT-123 | Surveying and Mapping | 3 |
| CDT-124 | Construction Materials and Management | 3 |
| CDT-205 | Hydraulics and Hydrology | 2 |
| CDT-206 | Hydraulics and Hydrology Lab | 1 |
| CDT-207 | Erosion and Sediment Control | 3 |
| CDT-221 | Civil 3D II | 2 |
| CDT-222 | Civil 3D II Lab | 2 |
| INT-299D | Internship (200 hours) | 4 |
| MAT-110 | Trigonometry | 3 |

| **Core Career** | | **Total: 25** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-110 (ART) | Contract Drawings | 3 |
| COM-112 (COM) | Public Speaking | 3 |
| Elective (COM) | Communications Elective | 3 |
| ADT-263 (HUM) | Architectural History | 3 |
| MAT-101 (MAT) | College Algebra I and Trigonometry | 3 |
| PHY-203 (SCI) | Statics and Strength of Materials | 3 |
| BUS-101 (SOC) | Introduction to Business | 3 |
| ADT-151 (TECH) | Introduction to Computer Assisted Drafting (CAD) | 2 |
| ADT-152 (TECH) | Introduction to Computer Assisted Drafting (CAD) Lab | 2 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **CDT Program Total** | **72** |
|---|---|

# Civil Design Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 17** |
|---|---|---|
| ADT-151 | Introduction to Computer Assisted Drafting (CAD) | 2 |
| ADT-152 | Introduction to Computer Assisted Drafting (CAD) Lab | 2 |
| ART-110 | Contract Drawings | 3 |
| CDT-101 | Introduction to Civil Design | 3 |
| COM Elective | Communications Elective | 3 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 19** |
|---|---|---|
| ADT-153 | Residential Planning | 2 |
| ADT-154 | Residential Planning Lab | 2 |
| ADT-155 | Project Estimating | 3 |
| ADT-240 | Technical Sketching | 3 |
| COM-112 | Public Speaking | 3 |
| MAT-110 | Trigonometry | 3 |
| PHY-203 | Statics and Strength of Materials | 3 |

| **Term 3 (Fall)** | | **Credits: 19** |
|---|---|---|
| ADT-263 | Architectural History | 3 |
| BUS-101 | Introduction to Business | 3 |
| CDT-121 | Civil 3D I | 2 |
| CDT-122 | Civil 3D I Lab | 2 |
| CDT-123 | Surveying and Mapping | 3 |
| CDT-124 | Construction Materials and Management | 3 |
| CDT-207 | Erosion and Sediment Control | 3 |

| **Term 4 (Spring)** | | **Credits: 17** |
|---|---|---|
| CDT-205 | Hydraulics and Hydrology | 2 |
| CDT-206 | Hydraulics and Hydrology Lab | 1 |
| CDT-221 | Civil 3D II | 2 |
| CDT-222 | Civil 3D II Lab | 2 |
| BTT Elective | Building Trades Elective | 3 |
| BUS-110 | Business Research and Report Writing | 3 |
| INT-299D | Internship | 4 |

# Computer Information Technology (AS)

## Program Objective

The Computer Information Technology Program prepares students as entry-level technicians for the maintenance, repair, and troubleshooting of the hardware and software used in today's local and wide area computer networking and information systems.

## Career Opportunities

Typical employers are any business or industry using information technology today. Some examples of these are banks, hospitals, educational institutions, government facilities, mail order facilities, retail chains, school districts, and manufacturing facilities. Students work with current industry standard computers, and computer networks.

## Program Learning Goals

**Goal 1:** Graduates will possess the appropriate skills needed for entering the Computer Information Technology field.

**Student Learning Outcomes -** Students will**:**

- Assemble, performance test, troubleshoot, repair, maintain and secure personal computers and servers
- Design, install, performance test, troubleshoot, repair and maintain Local Area Networks and Wide Area Networks

**Goal 2:** Graduates will learn the importance of good communications skills with all areas of a project.

**Student Learning Outcomes -** Students will**:**

- Interpret measures used to resolve a computer related problem and translate them into Layman's terms for the service report
- Interpret inter-team communications in order to help build a customer network
- Organize and manage team meetings in order to develop an IP address design for new networks

**Goal 3:** Graduates will develop critical thinking skills for troubleshooting various hardware and software issues.

**Student Learning Outcomes -** Students will**:**

- Recognize the importance of safe work habits and conditions
- Interpret customer needs and create a network based on those needs
- Investigate operating system malfunctions, recognize the cause, and develop a plan to resolve the malfunction.

## Computer Information Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 51** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| CIT-181 | Computer Hardware and Operating Systems | 2 |
| CIT-182 | Computer Hardware and Operating Systems Lab | 2 |
| CIT-183 | Network Architectures, Principles, and Protocols | 2 |
| CIT-184 | Network Architectures, Principles, and Protocols Lab | 1 |
| CIT-185 | TCP/IP Network Design Configuration and Maintenance | 2 |
| CIT-186 | TCP/IP Network Design Configuration and Maintenance Lab | 1 |
| CIT-187 | Linux Networking Service and Support | 2 |
| CIT-188 | Linux Networking Service and Support Lab | 1 |
| CIT-189 | Information System Security Design and Administration | 2 |
| CIT-190 | Information System Security Design and Administration Lab | 1 |
| CIT-191 | CompTIA A+ Certification Study Course | 1 |
| CIT-281 | LAN/WAN Design and Maintenance Principles | 2 |
| CIT-282 | LAN/WAN Design and Maintenance Principles Lab | 1 |
| CIT-283 | Server and Network Operating System Principles | 2 |
| CIT-284 | Server and Network Operating System Principles Lab | 1 |
| CIT-285 | Advanced Network Operating System Principles | 2 |
| CIT-286 | Advanced Network Operating System Principles Lab | 1 |
| CIT-289 | Web Programming, Server-Side Scripting | 2 |
| CIT-290 | Web Programming, Server-Side Scripting Lab | 1 |
| CIT-291 | AWS Cloud Technologies | 3 |
| DAT-201 | Database Principles and Applications | 3 |
| DAT-203 | Database Management Systems | 3 |
| INT-299A | Internship (50 hours) | 1 |
| MAT-201 | College Algebra II and Trigonometry | 3 |
| PRG-101 | Programming for Enterprise | 3 |
| PRG-103 | C Sharp | 3 |
| PRG-205 | Programming with Scripting Languages | 3 |

| **Core Career** | | **Total: 18** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-115 (ART) | Web Programming, Client-Side Scripting | 2 |
| ART-116 (TECH) | Web Programming, Client-Side Scripting Lab | 1 |
| COM-112 (COM) | Public Speaking | 3 |
| ENG-105 (HUM) | Industry Communication | 3 |
| MAT-101 (MAT) | College Algebra I and Trigonometry | 3 |
| Elective (SCI) | Science Elective | 3 |
| BUS-105 (SOC) | E-Commerce | 3 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **CIT Program Total** | **70** |
|---|---|

## Computer Information Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 18** |
|---|---|---|
| BUS-105 | E-Commerce | 3 |
| CIT-181 | Computer Hardware and Operating Systems | 2 |
| CIT-182 | Computer Hardware and Operating Systems Lab | 2 |
| CIT-183 | Network Architectures, Principles, and Protocols | 2 |
| CIT-184 | Network Architectures, Principles, and Protocols Lab | 1 |
| CIT-191 | CompTIA A+ Certification Study Course | 1 |
| PRG-101 | Programming for Enterprise | 3 |
| PRG-103 | C Sharp | 3 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 18** |
|---|---|---|
| CIT-185 | TCP/IP Network Design Configuration and Maintenance | 2 |
| CIT-186 | TCP/IP Network Design Configuration and Maintenance Lab | 1 |
| CIT-187 | Linux Networking Service and Support | 2 |
| CIT-188 | Linux Networking Service and Support Lab | 1 |
| CIT-189 | Information System Security Design and Administration | 2 |
| CIT-190 | Information System Security Design and Administration Lab | 1 |
| DAT-201 | Database Principles and Applications | 3 |
| ENG-105 | Industry Communication | 3 |
| MAT-101 | College Algebra I and Trigonometry | 3 |

| **Term 3 (Fall)** | | **Credits: 15** |
|---|---|---|
| CIT-281 | LAN/WAN Design and Maintenance Principles | 2 |
| CIT-282 | LAN/WAN Design and Maintenance Principles Lab | 1 |
| CIT-283 | Server and Network Operating System Principles | 2 |
| CIT-284 | Server and Network Operating System Principles Lab | 1 |
| DAT-203 | Database Management Systems | 3 |
| MAT-201 | College Algebra II and Trigonometry | 3 |
| PRG-205 | Programming with Scripting Languages | 3 |

| **Term 4 (Spring)** | | **Credits: 19** |
|---|---|---|
| ART-115 | Web Programming, Client-Side Scripting | 2 |
| ART-116 | Web Programming, Client-Side Scripting Lab | 1 |
| CIT-285 | Advanced Network Operating System Principles | 2 |
| CIT-286 | Advanced Network Operating System Principles Lab | 1 |
| CIT-289 | Web Programming, Server-Side Scripting | 2 |
| CIT-290 | Web Programming, Server-Side Scripting Lab | 1 |
| CIT-291 | AWS Cloud Technologies | 3 |
| COM-112 | Public Speaking | 3 |
| INT-299A | Internship (50 hours) | 1 |
| SCI Elective | Science Elective | 3 |

# Diesel Truck Technology (AAS)

## Program Objective

The Diesel Truck Technology program prepares students as entry-level technicians with the latest information on diagnosis, repair procedures, preventive maintenance, and necessary safety applications in diesel technology. The course prepares students to take the voluntary mechanic certification test (ASE) in heavy-duty trucks. Graduates work as tune-up, brakes, transmission and refrigeration technicians; diesel truck repair and fleet maintenance technicians; service writing technicians; and sales and service representatives.

## Career Opportunities

Typical employers of diesel truck technicians are truck, farm, and earth-moving equipment dealerships; trucking, power generation, and construction companies; truck service centers; engine repair/machine shops; truck equipment distributors; independent service garages; automotive parts manufacturers; sales representatives; and insurance companies.

## Program Learning Goals

**Goal 1:** Graduates will possess the appropriate skills and safety awareness that are needed for decision-making and critical thinking for entry into the Diesel Truck Technology field.

**Student Learning Outcomes** - Students will:

- Understand the use of proper safety equipment, for both themselves and shop practices
- Visualize situations to predict any concerns before attempting them
- Multitask and follow safety precautions while displaying well thought-out time management

**Goal 2:** Graduates will understand the importance of professional behavior and life-long learning within the Diesel Truck Industry.

**Student Learning Outcomes -** Students will:

- Communicate with managers, supervisors, or company owners in a professional and technical manner
- Seek opportunities for continued training after graduation and keep up with current technology

**Goal 3:** Graduates will meet the needs of the Diesel Truck Technology field. Graduates will be provided the skills that will provide them the opportunities in various areas of the diesel profession.

**Student Learning Outcomes -** Students will:

- Be able to troubleshoot heavy duty vehicle brake systems for safety concerns and faults
- Diagnose a diesel engine and repair a variety of different types of engines
- Diagnose and repair steering and suspension components
- Diagnose and repair drive line component issues
- Diagnose and repair HVAC components issues

# Diesel Truck Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 46** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| DTT-129 | Transportation Safety and Certifications | 2 |
| DTT-153 | Brake Systems for Diesel | 2 |
| DTT-154 | Brake Systems for Diesel Lab | 1 |
| DTT-155 | Steering and Suspension Systems for Diesel | 3 |
| DTT-159 | Advanced Electrical Systems for Diesel | 2 |
| DTT-160 | Advanced Electrical Systems for Diesel Lab | 1 |
| DTT-177 | Diesel Fuel Injection and Emissions | 2 |
| DTT-178 | Diesel Fuel Injection and Emissions Lab | 1 |
| DTT-179 | Diesel Engine Performance and Tune-up Procedures | 2 |
| DTT-180 | Diesel Engine Performance and Tune-up Procedures | 2 |
| DTT-277 | Manual Transmission Overhaul | 2 |
| DTT-278 | Manual Transmission Overhaul Lab | 1 |
| DTT-279 | Differentials and Drive Line | 3 |
| DTT-281 | Auto. Transmissions Diagnostics, Basic Hydraulics | 2 |
| DTT-282 | Auto. Transmissions Diagnostics, Basic Hydraulics Lab | 1 |
| DTT-283/284<br>**OR** INT-299D | Applied Diesel Truck Principles and Applications<br>**OR** Internship (200 hours) | 4 |
| DTT-285 | Diesel Engine Overhaul | 2 |
| DTT-286 | Diesel Engine Overhaul Lab | 2 |
| DTT-287 | Advances in Diesel Truck Technology | 2 |
| IET-101 | Introduction to Diesel Electricity and Electronics | 3 |
| VMR-161 | Welding and Flame Cutting for Vehicles | 1 |
| VMR-162 | Welding and Flame Cutting for Vehicles Lab | 2 |
| VMR-251 | HVAC Vehicle Systems | 2 |
| VMR-252 | HVAC Vehicle Systems Lab | 1 |

| **Core Career** | | **Total: 20** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-125 (ART) | Art in Industry | 2 |
| ART-126 (ART) | Art in Industry Lab | 1 |
| ENG-105 (COM) | Industry Communication | 3 |
| CSM-105 (HUM) | Customer Service in Our World | 3 |
| Elective (MAT) | Mathematics Elective | 3 |
| Elective (SCI) | Science Elective (PHY-120 or SCI-150) | 3 |
| BUS-101 (SOC) | Introduction to Business | 3 |
| VMR-151 (TECH) | Introduction to Vehicle Maintenance and Repair Technology | 2 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **DTT Program Total** | **67** |
|---|---|

# Diesel Truck Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 15** |
|---|---|---|
| DTT-153 | Brake Systems for Diesel | 2 |
| DTT-154 | Brake Systems for Diesel Lab | 1 |
| DTT-155 | Steering and Suspension Systems for Diesel | 3 |
| IET-101 | Introduction to Diesel Electricity and Electronics | 3 |
| MAT Elective | Mathematics Elective | 3 |
| SSS-101 | First Year Experience | 1 |
| VMR-151 | Introduction to Vehicle Maintenance and Repair Technology | 2 |

| **Term 2 (Spring)** | | **Credits: 16** |
|---|---|---|
| DTT-159 | Advanced Electrical Systems for Diesel | 2 |
| DTT-160 | Advanced Electrical Systems for Diesel Lab | 1 |
| DTT-177 | Diesel Fuel Injection and Emissions | 2 |
| DTT-178 | Diesel Fuel Injection and Emissions Lab | 1 |
| DTT-179 | Diesel Engine Performance and Tune-up Procedures | 2 |
| DTT-180 | Diesel Engine Performance and Tune-up Procedures | 2 |
| ENG-105 | Industry Communication | 3 |
| SCI Elective | Science Elective | 3 |

| **Term 3 (Fall)** | | **Credits: 19** |
|---|---|---|
| ART-125/126 | Art in Industry | 3 |
| BUS-101 | Introduction to Business | 3 |
| DTT-277 | Manual Transmission Overhaul | 2 |
| DTT-278 | Manual Transmission Overhaul Lab | 1 |
| DTT-279 | Differentials and Drive Line | 3 |
| DTT-285 | Diesel Engine Overhaul | 2 |
| DTT-286 | Diesel Engine Overhaul Lab | 2 |
| VMR-161 | Welding and Flame Cutting for Vehicles | 1 |
| VMR-162 | Welding and Flame Cutting for Vehicles Lab | 2 |

| **Term 4 (Spring)** | | **Credits: 17** |
|---|---|---|
| CSM-105 | Customer Service in Our World | 3 |
| DTT-129 | Transportation Safety and Certifications | 2 |
| DTT-281 | Auto. Transmissions Diagnostics, Basic Hydraulics | 2 |
| DTT-282 | Auto. Transmissions Diagnostics, Basic Hydraulics Lab | 1 |
| DTT-283/284<br>**OR** INT-299D | Applied Diesel Truck Principles and Applications<br>**OR** Internship | 4 |
| DTT-287 | Advances in Diesel Truck Technology | 2 |
| VMR-251 | HVAC Vehicle Systems | 2 |
| VMR-252 | HVAC Vehicle Systems Lab | 1 |

# Electrical Construction Technology (AAS)

## Program Objective

The Electrical Construction Technology program prepares students as entry-level technicians for the operation, inspection, installation, calibration, repair, maintenance and safety of residential and commercial electrical equipment.

## Career Opportunities

Graduates work as residential and commercial electricians, industrial engineering technicians in production environments. Graduates will also be prepared as quality assurance technicians, linemen or technicians for the power industry. Typical employers in the electrical field are telecommunications companies, utilities, Union and Non-union electrical companies and manufacturing companies.

## Program Learning Goals

**Goal 1:** The graduate will be prepared as an entry-level technician in the electrical construction and maintenance industry

**Student Learning Outcomes -** Students will:

- Install cables and raceways
- Read and understand electrical prints
- Be proficient in meter usage

**Goal 2:** Graduates will demonstrate safe electrical practices and understand how important they are in the electrical environment.

**Student Learning Outcomes -** Students will:

- Properly demonstrate lock out / tag out practices
- Perform tasks in accordance with OSHA guidelines
- Demonstrate proper usage of personal protective equipment (PPE)

**Goal 3:** Graduates will acquire a foundation of education and skills for career advancement and lifelong learning.

**Student Learning Outcomes** - Students will:

- Perform in a professional manner
- Understand the National Electrical Code (NEC)
- Demonstrate proper installation and worksite housekeeping

## Electrical Construction Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 38** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| BTT-103 | Introduction to Pipefitting | 2 |
| BTT-105 | Introduction to Electricity for the Trades | 1 |
| BTT-106 | Introduction to Electricity for the Trades Lab | 2 |
| BTT-251 | Motors and Controls | 2 |
| BTT-252 | Motors and Controls Lab | 4 |
| BTT Elective | Building Trades Elective | 3 |
| BTT-OSHA | OSHA 10 Construction Safety Certification | 0 |
| ECT-161 | Residential Wiring | 2 |
| ECT-162 | Residential Wiring Lab | 4 |
| ECT-260<br>**OR** INT-299D | Applied Practice and Special Topics<br>**OR** Internship (200 hours) | 4 |
| ECT-271 | Electrical Grounding, Bonding and Service Installation | 1 |
| ECT-272 | Electrical Grounding, Bonding and Service Installation Lab | 2 |
| ECT-273 | National Electrical Code Interpretation | 1 |
| ECT-275 | Commercial Wiring | 1 |
| ECT-276 | Commercial Wiring Lab | 2 |
| ECT-277 | Industrial Maintenance and Mechanics | 2 |
| ECT-278 | Industrial Maintenance and Mechanics Lab | 1 |
| MEC-245 | Programmable Logic Controllers | 2 |
| MEC-246 | Programmable Logic Controllers Lab | 2 |

| **Core Career** | | **Total: 22** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-110 (ART) | Contract Drawings | 3 |
| Elective (COM) | Communication Elective | 3 |
| CSM-105 (HUM) | Customer Service and Our World | 3 |
| MAT-101 (MAT) | College Algebra I and Trigonometry | 3 |
| BTT-151 (SCI) | Fundamentals of Electricity | 2 |
| BTT-152 (SCI) | Fundamentals of Electricity Lab | 2 |
| BUS-101 (SOC) | Introduction to Business | 3 |
| CPT-101 (TECH) | Microcomputer I | 3 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **ECM Program Total** | **61** |
|---|---|

## Electrical Construction Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 15 or 17** |
|---|---|---|
| BTT-103<br>**OR** BTT-151/152 | Introduction to Pipefitting<br>**OR** Fundamentals of Electricity/ Fundamentals of Electricity Lab | 2 **or** 4 |
| BTT-105 | Introduction to Electricity for the Trades | 1 |
| BTT-106 | Introduction to Electricity for the Trades Lab | 2 |
| BTT-OSHA | OSHA 10 Construction Safety Certification | 0 |
| CPT-101 | Microcomputer I | 3 |
| COM Elective | Communication Elective | 3 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 14 or 16** |
|---|---|---|
| BTT-103<br>**OR** BTT-151/152 | Introduction to Pipefitting<br>**OR** Fundamentals of Electricity/ Fundamentals of Electricity Lab | 2 **or** 4 |
| BTT Elective | Construction Elective | 3 |
| ECT-161 | Residential Wiring | 2 |
| ECT-162 | Residential Wiring Lab | 4 |
| BUS-101 | Introduction to Business | 3 |

| **Term 3 (Fall)** | | **Credits: 14** |
|---|---|---|
| ART-110 | Contract Drawings | 3 |
| ECT-271 | Electrical Grounding, Bonding and Service Installation | 1 |
| ECT-272 | Electrical Grounding, Bonding and Service Installation Lab | 2 |
| ECT-273 | National Electrical Code Interpretation | 1 |
| ECT-275 | Commercial Wiring | 1 |
| ECT-276 | Commercial Wiring Lab | 2 |
| MEC-245 | Programmable Logic Controllers | 2 |
| MEC-246 | Programmable Logic Controllers Lab | 2 |

| **Term 4 (Spring)** | | **Credits: 16** |
|---|---|---|
| BTT-251 | Motors and Controls | 2 |
| BTT-252 | Motors and Controls Lab | 4 |
| CSM-105 | Customer Service and Our World | 3 |
| ECT-260<br>**OR** INT-299D | Applied Practice and Special Topics<br>**OR** Internship | 4 |
| ECT-277 | Industrial Maintenance and Mechanics | 2 |
| ECT-278 | Industrial Maintenance and Mechanics Lab | 1 |

# Electronic Engineering Technology (AAS)

## Program Objective

The Electronic Engineering Technology program prepares graduates as entry-level technicians. Students will become proficient in the theoretical and practical applications associated with electronic devices, instrumentation controls, and systems.

## Career Opportunities

Graduates work as technicians and sales representatives in the field of electronic instrumentation and computer repair. Typical employers in the electronic career are machine, tool, and instrumentation manufacturers; electronic service companies; communication industries; electronic media; and electronic sales.

## Program Learning Goals

**Goal 1:** Graduates will be able to troubleshoot electronic circuits and systems using theoretical principles and measured values to resolve operational issues.

**Student Learning Outcomes** - Students will:

- Demonstrate competence with circuit identification
- Demonstrate competence in using various pieces of test equipment to gather information about a circuit or systems operation
- Employ corrective actions to make repair to systems under test

**Goal 2:** Graduates will demonstrate the ability to communicate with a customer, team member or supervisor in a professional manner to determine the nature of a problem or to explain repairs.

**Student Learning Outcomes** - Students will:

- Explain the defect found in circuits or systems and the solution to rectify the problem
- Produce written reports outlining work performed

**Goal 3:** Graduates will be able to use hand tools and test equipment in a safe manner.

**Student Learning Outcomes** - Students will:

- Demonstrate the safe use of a multimeter while making measurements in live circuits
- Demonstrate the safe use of oscilloscopes and other lab equipment to make measurements or apply signals.

## Electronic Engineering Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 48** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| CIT-183 | Network Architectures, Principles, and Protocols | 2 |
| CIT-184 | Network Architectures, Principles, and Protocols Lab | 1 |
| EET-101 | Introduction to Electronic Equipment | 1 |
| EET-165 | Digital Electronics | 2 |
| EET-166 | Digital Electronics Lab | 2 |
| EET-167 | Introduction to Semiconductors | 2 |
| EET-168 | Introduction to Semiconductors Lab | 1 |
| EET-169 | Integrated Circuits and Thyristors | 2 |
| EET-170 | Integrated Circuits and Thyristors Lab | 1 |
| EET-261 | Communication Electronics | 2 |
| EET-262 | Communication Electronics Lab | 1 |
| EET-265/266<br>**OR** INT-299D | Applied Electronics Principles and Applications/Lab<br>**OR** Internship (200 hours) | 4 |
| MAT-201 | College Algebra II and Trigonometry | 3 |
| MEC-103 | Project Management | 2 |
| MEC-155 | Additive Manufacturing | 1 |
| MEC-156 | Additive Manufacturing Lab | 2 |
| MEC-157 | Sensors and Systems in Automation | 2 |
| MEC-158 | Sensors and Systems in Automation Lab | 1 |
| MEC-243 | Automation and Robotics I | 2 |
| MEC-244 | Automation and Robotics I Lab | 2 |
| MEC-245 | Programmable Logic Controllers I | 2 |
| MEC-246 | Programmable Logic Controllers I Lab | 2 |
| MEC-253 | Automation and Robotics II | 2 |
| MEC-254 | Automation and Robotics II Lab | 2 |
| MEC-255 | Programmable Logic Controllers II | 2 |
| MEC-256 | Programmable Logic Controllers II Lab | 2 |

| **Core Career** | | **Total: 21** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-127 (ART) | Computer Aided Design | 3 |
| COM-112 (COM) | Public Speaking | 3 |
| Elective (HUM) | Humanities Elective | 3 |
| MAT-101 (MAT) | College Algebra I and Trigonometry | 3 |
| EET-161 (SCI) | DC Electricity and Instrumentation | 2 |
| EET-162 (SCI) | DC Electricity and Instrumentation Lab | 1 |
| BUS-101 (SOC) | Introduction to Business | 3 |
| EET-163 (TECH) | Alternating Current and Passive Devices | 2 |
| EET-164 (TECH) | Alternating Current and Passive Devices Lab | 1 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **EET Program Total** | **70** |
|---|---|

## Electronic Engineering Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 16** |
|---|---|---|
| ART-127 | Computer Aided Design | 3 |
| EET-101 | Introduction to Electronic Equipment | 1 |
| EET-161 | DC Electricity and Instrumentation | 2 |
| EET-162 | DC Electricity and Instrumentation Lab | 1 |
| EET-163 | Alternating Current and Passive Devices | 2 |
| EET-164 | Alternating Current and Passive Devices Lab | 1 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| MEC-103 | Project Management | 2 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 19** |
|---|---|---|
| EET-165 | Digital Electronics | 2 |
| EET-166 | Digital Electronics Lab | 2 |
| EET-167 | Introduction to Semiconductors | 2 |
| EET-168 | Introduction to Semiconductors Lab | 1 |
| EET-169 | Integrated Circuits and Thyristors | 2 |
| EET-170 | Integrated Circuits and Thyristors Lab | 1 |
| HUM Elective | Humanities Elective | 3 |
| MAT-201 | College Algebra II and Trigonometry | 3 |
| MEC-157 | Sensors and Systems in Automation | 2 |
| MEC-158 | Sensors and Systems in Automation Lab | 1 |

| **Term 3 (Fall)** | | **Credits: 17** |
|---|---|---|
| BUS-101 | Introduction to Business | 3 |
| COM-112 | Public Speaking | 3 |
| EET-261 | Communication Electronics | 2 |
| EET-262 | Communication Electronics Lab | 1 |
| MEC-243 | Automation and Robotics I | 2 |
| MEC-244 | Automation and Robotics I Lab | 2 |
| MEC-245 | Programmable Logic Controllers I | 2 |
| MEC-246 | Programmable Logic Controllers I Lab | 2 |

| **Term 4 (Spring)** | | **Credits: 18** |
|---|---|---|
| CIT-183 | Network Architectures, Principles, and Protocols | 2 |
| CIT-184 | Network Architectures, Principles, and Protocols Lab | 1 |
| EET-265/266<br>**OR** INT-299D | Applied Electronics Principles and Applications/Lab<br>**OR** Internship | 4 |
| MEC-155 | Additive Manufacturing | 1 |
| MEC-156 | Additive Manufacturing Lab | 2 |
| MEC-253 | Automation and Robotics II | 2 |
| MEC-254 | Automation and Robotics II Lab | 2 |
| MEC-255 | Programmable Logic Controllers II | 2 |
| MEC-256 | Programmable Logic Controllers II Lab | 2 |

# Heating, Ventilation, and Air Conditioning Technology (AAS)

## Program Objective

The Heating, Ventilation, and Air Conditioning (HVAC) program provides students with the skills needed for entry-level positions in the installing, repairing and troubleshooting of various heating and cooling equipment. Students will work with industrial standard tools associated with equipment such as oil and gas furnaces, refrigeration units, and air conditioning equipment.

## Career Opportunities

Employment opportunities consist of HVAC installers, controls technicians, service technicians, maintenance mechanics, plumbers, engineers, programmers, research development, management, sales, and dispatch. But let's be clear - this is an exciting, evolving field that requires hard work, dedication, innovation and creative problem solving.

## Program Learning Goals

**Goal 1:** Graduates will possess the skills necessary to obtain an entry-level HVAC Technician position.

**Student Learning Outcomes** - Students will:

- Identify HVAC/R equipment and system components, their functions, and their correlation within a system
- Install various heating, air conditioning and refrigeration equipment
- Pipe a hydronic heating system per manufacturer specifications
- Develop and apply competent wiring skills
- Demonstrate industry specified soldering and brazing techniques

**Goal 2:** Graduates will demonstrate safe HVAC practices and obtain an understanding of the significance of safety procedures in the HVAC environment.

**Student Learning Outcomes** - Students will:

- Perform tasks in accordance with OSHA guidelines
- Exhibit proper usage of personal protective equipment (PPE)
- Demonstrate the safe practices usage of all tools and equipment

**Goal 3:** Graduates will be able to perform entry level troubleshooting and preventative maintenance on various heating, air conditioning and refrigeration systems.

**Student Learning Outcomes** - Students will:

- Demonstrate entry-level diagnostic and service procedures for residential and light commercial air conditioning systems, such as split systems, ductless systems, and package units
- Demonstrate entry-level diagnostic and service procedures for residential and light commercial heating systems, such as furnaces, boilers, heat pumps, and roof top units
- Demonstrate entry-level diagnostic and service procedures for residential and light commercial refrigeration systems, in particular walk-in coolers, icemakers, and freezers

## Heating, Ventilation, and Air Conditioning Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 41** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| BTT-103 | Introduction to Pipefitting | 2 |
| BTT-105 | Introduction to Electricity for the Trades | 1 |
| BTT-106 | Introduction to Electricity for the Trades Lab | 2 |
| BTT-151 | Fundamentals of Electricity | 2 |
| BTT-152 | Fundamentals of Electricity Lab | 2 |
| BTT-251 | Motors and Controls | 2 |
| BTT-252 | Motors and Controls Lab | 4 |
| BTT Elective | Building Trades Elective | 3 |
| BTT-OSHA | OSHA 10 Construction Safety Certification | 0 |
| HAC-189 | Refrigeration | 2 |
| HAC-190 | Refrigeration Lab | 4 |
| HAC-283 | Heating System Design and Installation | 2 |
| HAC-284 | Heating System Design and Installation Lab | 4 |
| HAC-285 | Air Conditioning Systems | 3 |
| HAC-287 | EPA Section 608 Certification | 1 |
| HAC-290<br>**OR** INT-299D | Applied Practice and Special Topics<br>**OR** Internship (200 hours) | 4 |
| HAC-291<br>**OR** HAC-293 | Commercial HVAC/R<br>**OR** Introduction to Building Automation Systems | 3 |

| **Core Career** | | **Total: 21** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-110 (ART) | Contract Drawings | 3 |
| COM-112 (COM) | Public Speaking | 3 |
| ENG-105 (HUM) | Industry Communication | 3 |
| MAT-101 (MAT) | College Algebra I and Trigonometry | 3 |
| Elective (SCI) | Science Elective | 3 |
| BUS-101 (SOC) | Introduction to Business | 3 |
| CPT-101 (TECH) | Microcomputer I | 3 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **HAC Program Total** | **63** |
|---|---|

## Heating, Ventilation, and Air Conditioning Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 16** |
|---|---|---|
| BTT-103 | Introduction to Pipefitting | 2 |
| BTT-151 | Fundamentals of Electricity | 2 |
| BTT-152 | Fundamentals of Electricity Lab | 2 |
| BTT-OSHA | OSHA 10 Construction Safety Certification | 0 |
| CPT-101 | Microcomputer I | 3 |
| COM-112 | Public Speaking | 3 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 15** |
|---|---|---|
| ART-110 | Contract Drawings | 3 |
| BTT-105 | Introduction to Electricity for the Trades | 1 |
| BTT-106 | Introduction to Electricity for the Trades Lab | 2 |
| HAC-189 | Refrigeration | 2 |
| HAC-190 | Refrigeration Lab | 4 |
| SCI Elective | Science Elective | 3 |

| **Term 3 (Fall)** | | **Credits: 16** |
|---|---|---|
| BTT Elective | Construction Elective | 3 |
| ENG-105 | Industry Communication | 3 |
| HAC-283 | Heating System Design and Installation | 2 |
| HAC-284 | Heating System Design and Installation Lab | 4 |
| HAC-285 | Air Conditioning Systems | 3 |
| HAC-287 | EPA Section 608 Certification | 1 |

| **Term 4 (Spring)** | | **Credits: 16** |
|---|---|---|
| BTT-251 | Motors and Controls | 2 |
| BTT-252 | Motors and Controls Lab | 4 |
| BUS-101 | Introduction to Business | 3 |
| HAC-290<br>**OR** INT-299D | Applied Practice and Special Topics<br>**OR** Internship | 4 |
| HAC-291<br>**OR** HAC-293 | Commercial HVAC/R<br>**OR** Introduction to Building Automation Systems | 3 |

# Mechatronics Technology (AAS)

## Program Objective

The Mechatronics Technology program prepares graduates as entry-level technicians. Students will become proficient in the theoretical and practical applications associated with electronic devices, fabrication technologies, electro-mechanical systems, and industry 4.0.

## Career Opportunities

Electro-mechanical technicians have the ability to work in many industrial environments, including energy, plastics, computer and communications equipment manufacturing, and aerospace. They often work both at production sites and in offices.

## Program Learning Goals

**Goal 1:** Graduates will possess the skills needed to obtain an entry-level technician position in the mechatronics field.

**Student Learning Outcomes** - Students will:

- Demonstrate knowledge of the work environment, behavior, and dress
- Demonstrate the ability to safely setup and operate electronic equipment
- Demonstrate safe setup and operation of various electro-mechanical, digital fabrication, and kinematic systems

**Goal 2:** Graduates will be able to troubleshoot electrical, electronic, and mechanical systems using theoretical principles and measured values to resolve operational issues.

**Student Learning Outcomes** - Students will:

- Demonstrate competence with circuit identification and print reading
- Demonstrate competence in using various pieces of test equipment to gather information about a circuit or systems operation
- Employ corrective actions to effect repairs to systems

**Goal 3:** Graduates will demonstrate the ability to communicate with a customer, team member, or supervisor in a professional manner to determine the nature of a problem or to explain repairs.

**Student Learning Outcomes** - Students will:

- Explain the defect found in circuits or systems and the solution to rectify the problem
- Produce written reports outlining work performed

**Goal 4:** Graduates will demonstrate the proper and safe use of hand tools, measuring equipment, and test equipment used during fabrication or troubleshooting**.**

**Student Learning Outcomes** - Students will:

- Demonstrate correct and accurate use of measuring instrument
- Demonstrate correct use of hand tools, power tools, and safety equipment (PPE)

## Mechatronics Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 44** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| EET-101 | Introduction to Electronic Equipment | 1 |
| MEC-103 | Project Management | 2 |
| MEC-151 | Hand Fabrication | 1 |
| MEC-152 | Hand Fabrication Lab | 2 |
| MEC-155 | Additive Manufacturing | 1 |
| MEC-156 | Additive Manufacturing Lab | 2 |
| MEC-157 | Sensors and Systems in Automation | 2 |
| MEC-158 | Sensors and Systems in Automation Lab | 1 |
| MEC-161 | Microcontrollers and Applications | 1 |
| MEC-162 | Microcontrollers and Applications Lab | 2 |
| MEC-243 | Automation and Robotics I | 2 |
| MEC-244 | Automation and Robotics I Lab | 2 |
| MEC-245 | Programmable Logic Controllers I | 2 |
| MEC-246 | Programmable Logic Controllers I Lab | 2 |
| MEC-251 | Industry 4.0 | 1 |
| MEC-252 | Industry 4.0 Lab | 3 |
| MEC-253 | Automation and Robotics II | 2 |
| MEC-254 | Automation and Robotics II Lab | 2 |
| MEC-255 | Programmable Logic Controllers II | 2 |
| MEC-256 | Programmable Logic Controllers II Lab | 2 |
| MEC-257 | Production and Assembly | 2 |
| MEC-258 | Production and Assembly Lab | 3 |
| MEC-259/260<br>**OR** INT-299D | Capstone Project/ Capstone Project Lab<br>**OR** Internship (200 hours) | 4 |

| **Core Career** | | **Total: 21** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-127 (ART) | Computer Aided Design | 3 |
| ENG-101 (COM) | English Composition I | 3 |
| Elective (HUM) | Humanities Elective | 3 |
| MAT-110 (MAT) | Trigonometry | 3 |
| EET-161 (SCI) | DC Electricity and Instrumentation | 2 |
| EET-162 (SCI) | DC Electricity and Instrumentation Lab | 1 |
| CSM-105 (SOC) | Customer Service and Our World | 3 |
| EET-163 (TECH) | Alternating Current and Passive Devices | 2 |
| EET-164 (TECH) | Alternating Current and Passive Devices Lab | 1 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **MEC Program Total** | **66** |
|---|---|

## Mechatronics Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 16** |
|---|---|---|
| ART-127 | Computer Aided Design | 3 |
| EET-101 | Introduction to Electronic Equipment | 1 |
| EET-161 | DC Electricity and Instrumentation | 2 |
| EET-162 | DC Electricity and Instrumentation Lab | 1 |
| EET-163 | Alternating Current and Passive Devices | 2 |
| EET-164 | Alternating Current and Passive Devices Lab | 1 |
| MEC-103 | Project Management | 2 |
| MEC-151 | Hand Fabrication | 1 |
| MEC-152 | Hand Fabrication Lab | 2 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 18** |
|---|---|---|
| ENG-101 | English Composition I | 3 |
| HUM Elective | Humanities Elective | 3 |
| MAT-110 | Trigonometry | 3 |
| MEC-155 | Additive Manufacturing | 1 |
| MEC-156 | Additive Manufacturing Lab | 2 |
| MEC-157 | Sensors and Systems in Automation | 2 |
| MEC-158 | Sensors and Systems in Automation Lab | 1 |
| MEC-161 | Microcontrollers and Applications | 1 |
| MEC-162 | Microcontrollers and Applications Lab | 2 |

| **Term 3 (Fall)** | | **Credits: 15** |
|---|---|---|
| CSM-105 | Customer Service and Our World | 3 |
| MEC-243 | Automation and Robotics I | 2 |
| MEC-244 | Automation and Robotics I Lab | 2 |
| MEC-245 | Programmable Logic Controllers I | 2 |
| MEC-246 | Programmable Logic Controllers I Lab | 2 |
| MEC-251 | Industry 4.0 | 1 |
| MEC-252 | Industry 4.0 Lab | 3 |

| **Term 4 (Spring)** | | **Credits: 17** |
|---|---|---|
| MEC-253 | Automation and Robotics II | 2 |
| MEC-254 | Automation and Robotics II Lab | 2 |
| MEC-255 | Programmable Logic Controllers II | 2 |
| MEC-256 | Programmable Logic Controllers II Lab | 2 |
| MEC-257 | Production and Assembly | 2 |
| MEC-258 | Production and Assembly Lab | 3 |
| MEC-259/260<br>**OR** INT-299D | Capstone Project/ Capstone Project Lab<br>**OR** Internship | 4 |

# Physical Therapist Assistant (AS)

## Program Objective

The Physical Therapist Assistant program prepares students for entry-level positions in a variety of clinical settings. Graduates will be prepared to take the National Physical Therapy Exam for Physical Therapist Assistants.

## Career Opportunities

Physical therapy is a very rewarding and diverse profession. Practicing physical therapist assistants have the option to work in a variety of settings, including: hospitals, inpatient and outpatient rehabilitation settings, skilled nursing facilities, private practices, home health, and schools. PTAs can also teach in physical therapist assistant programs or if they choose, can further their education in a variety of related fields.

## Program Mission Statement

The mission of the Physical Therapist Assistant Program at Johnson College is to prepare students to be competent and caring entry-level physical therapist assistants who work under the direction and supervision of a physical therapist in a variety of settings. Students will be committed to developing and continuing professional competence, demonstrating lifelong learning, and adhering to the behavioral expectations outlined in the APTA Guide for Conduct and Standards of Ethical Conduct for the PTA.

## What do Physical Therapist Assistants do?

Physical therapy plays a vital role in helping individuals achieve their optimal level of mobility and independence. Physical therapist assistants work under the direction and supervision of licensed physical therapists and work directly with patients to help improve quality of life. Physical therapist assistants must be well educated and personable.

## Programmatic Accreditation

The Physical Therapist Assistant Program at Johnson College is accredited by:

Commission on Accreditation in Physical Therapy Education,
American Physical Therapy Association
3030 Potomac Ave., Suite 100
Alexandria, VA 22305-3085
703-706-3245
accreditation@apta.org
www.capteonline.org

**Program Learning Goals**

The goals of the Johnson College Physical Therapist Assistant Program are as follows:

**Goal 1:** To prepare graduates to meet the professional and licensure requirements necessary to function as entry-level PTAs under the direction and supervision of a physical therapist in a variety of clinical settings.

**Student Learning Outcomes** - Students will:

- Demonstrate competence implementing interventions identified in the plan of care under the direction and supervision of the physical therapist
- Demonstrate competency performing components of data collection skills under the direction and supervision of the physical therapist
- Complete thorough, accurate, logical, concise, timely, and legible documentation that meets the requirements of the facility
- Pass the NPTAE at a rate consistent with CAPTE requirements within one year of graduation
- Be employed in the field within one year of graduation

**Goal 2:** To ensure students are prepared to meet the needs and expectations of members of society who seek physical therapy services.

**Student Learning Outcomes** - Students will:

- Exhibit conduct that reflects practice standards that are legal, ethical, and safe
- Communicate effectively with other health care providers and with patients, family members, and caregivers in order to achieve patient outcomes based on the physical therapy plan of care
- Respect and act with consideration for individual differences, values, and preferences of peers and patients

**Goal 3:** To ensure students are able to use problem solving and critical thinking skills to respond appropriately to clinical situations they may encounter as a physical therapist assistant.

**Student Learning Outcomes** - Students will:

- Recognize when interventions should be modified or not provided due to changes in the patient's status or due to violations in practice guidelines and report this to the supervising physical therapist
- Implement risk management strategies during all lab and clinical activities to ensure the safety of themselves and others

**Goal 4:** To ensure students understand the value of volunteerism, leadership, and continued competence as physical therapist assistants.

**Student Learning Outcomes** - Students will:

- Develop a plan for continuing competence as a PTA
- Participate in volunteer opportunities for professional and/or community organizations

**Department Goals**

The goals of the Johnson College Physical Therapist Assistant Department are as follows:

**Goal 1:** To ensure that educators of the program, both didactic and clinical, provide instruction and guidance that meet the needs of the students and the program.

**Outcomes -**

- Faculty will maintain current licensure in PA
- Faculty will participate in continuing professional competence related to teaching responsibilities
- Faculty will utilize effective instructional methods during didactic, laboratory, and clinical courses

**Goal 2:** To provide students with a curriculum and resources that are current and in compliance with standards set forth by the Commission on Accreditation in Physical Therapy Education (CAPTE), by the American Physical Therapy Association (APTA), by the Pennsylvania Physical Therapy Practice Act, and by the institution.

**Outcomes -**

- The curriculum will be reviewed annually by the Program Director, core faculty, and the Program Advisory Committee to ensure it is aligned with current requirements and practice trends
- The program resources will be reviewed annually by the Program Director, core faculty, and the Program Advisory Committee to ensure adequacy to meet the needs of the program

**Special Admissions Requirements**

Admittance to the Physical Therapist Assistant Program at Johnson College is based on a selective admission process that has been developed to ensure that students who are admitted to the Johnson College PTA Program are prepared to succeed in the program and enter the workforce as competent entry-level physical therapist assistants. Students are admitted based on their merit without being discriminated against on the basis of race, religion, color, sex, age, national origin, non-job related disability, sexual orientation, or veteran status. Current enrollment is limited to 12 new students per year based on the number of applicants who meet the admission criteria and qualifications.

The procedure for applicants who desire to seek acceptance into the PTA program is as follows:

1. Applicants must contact the Johnson College enrollment staff to initiate the application process, which includes application submission.
2. Students must meet the following minimum requirements:
   a. SAT scores of 900 (combined math and verbal with not less than 450 on either section) or above or ACT scores 18 or above or Next Generation Accuplacer score of 237 or higher in Arithmetic and Writing.
   b. GPA 2.67 or higher*
   c. 1 year of Algebra with a "B-" or higher*
   d. 2 years of English with a "B-" or higher*
   e. 1 year of Biology with a "B-" or higher*
   f. Recommended: 1 year of an additional life or physical science with a "B-" or higher*
   g. PTA Admissions Questionnaire
   h. 2 Recommendations (1 from a Physical therapist or physical therapist assistant)
   i. 16 hours of observation (½ inpatient setting, ½ outpatient setting)
3. Once the applicant has completed all of the above prerequisites, the admissions representative will send the file to the program director for review.

*(*denotes prerequisites that can be completed in high school or college; college level courses will be weighted more in the scoring process)*

**Special Enrollment Requirements**

Prior to admission, students must complete 16 hours of observation in a physical therapy clinic with a Physical Therapist Assistant or a Physical Therapist and provide verification and complete the program admissions questionnaire.

**Special Fees**

In addition to tuition and program fees, students are responsible for the cost of physical exams and immunizations. Students are also required to join the American Physical Therapy Association as student PTA members.

**Academic Progression** (*within PTA Program)*

Students are required to show both didactic and clinical progression each term in order to progress through the Physical Therapist Assistant Program.

- In order to start the technical phase of the program (3rd term), students must meet the following requirements:
    - Students must have a 2.67 minimum GPA in general education courses
    - The student **MUST PASS** MTR-100, BIO-107, BIO-108, BIO-109, and BIO-110 with a grade of B- (80%) or higher
    - Students must pass Anatomy modules on the skeletal, muscular, and nervous systems with a minimum score of 80% prior to starting technical courses
- The student **MUST PASS** each Physical Therapist Assistant didactic course with a grade of C+ (76) or higher.
- In order to successfully pass each PTA course and progress through the program, students must:
    - receive a 76% or higher in each PTA course
    - meet requirements indicated in Written Exam Policy, Skills Checklist Policy, Practical Exam Policy, and Professional Behavior Policy
- The student **MUST PASS** each of the three clinical education courses (PTA-270, PTA-280, and PTA-290).
- The student **MUST** maintain a term and career GPA of 2.33 or higher for all PTA courses.

*If any of the above requirements are not met, the student **will not be** allowed to progress in the PTA program.*

**Clinical Education**

Clinical education is a significant part of the Physical Therapist Assistant Program. Prior to the clinical education experiences, students must complete criminal background checks, fingerprinting, child abuse clearance, and drug testing. Students must satisfy the clinical requirements for both Johnson College and the clinical sites in order to successfully complete the program.

**Physical Therapist Assistant Student Handbook**

Physical Therapist Assistant students are responsible for reading and abiding by all policies and procedures in the Physical Therapist Assistant Student Handbook and Clinical Handbook.

# Physical Therapist Assistant

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 47** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| BIO-109 | Human Anatomy and Physiology II | 3 |
| BIO-110 | Human Anatomy and Physiology II Lab | 1 |
| MTR-100 | Medical Terminology | 1 |
| PTA-103 | Introduction to Physical Therapy for the Physical Therapist Assistant | 2 |
| PTA-151 | Patient Care | 2 |
| PTA-152 | Patient Care Lab | 1 |
| PTA-153 | Physical Therapy Procedures | 2 |
| PTA-154 | Physical Therapy Procedures Lab | 1 |
| PTA-155 | Principles of Therapeutic Exercise | 1 |
| PTA-156 | Principles of Therapeutic Exercise Lab | 1 |
| PTA-221 | Pathophysiology | 2 |
| PTA-223 | Applied Kinesiology | 3 |
| PTA-224 | Applied Kinesiology Lab | 1 |
| PTA-255 | Interventions in Musculoskeletal | 3 |
| PTA-256 | Interventions in Musculoskeletal Lab | 1 |
| PTA-257 | Interventions in Neurology | 3 |
| PTA-258 | Interventions in Neurology Lab | 1 |
| PTA-259 | Topics in Rehabilitation | 3 |
| PTA-260 | Topics in Rehabilitation Lab | 1 |
| PTA-270 | Clinical Experience I | 2 |
| PTA-280 | Clinical Experience II | 5 |
| PTA-290 | Clinical Experience III | 6 |
| PTA-295 | Professional Seminar | 1 |

| **Core Career** | | **Total: 19** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-131 (ART) | Prosthetics Design | 3 |
| ENG-101 (COM) | English Composition I | 3 |
| Elective (HUM) | Humanities Elective (CSM-105 or HMN-101) | 3 |
| MAT-121 (MAT) | Introduction to Statistics | 3 |
| BIO-107 (SCI) | Human Anatomy and Physiology I | 3 |
| PSY-101 (SOC) | General Psychology | 3 |
| BIO-108 (TECH) | Human Anatomy and Physiology I Lab | 1 |

| **Grad Req** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **PTA Program Total** | **67** |
|---|---|

# Physical Therapist Assistant

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 14** |
|---|---|---|
| BIO-107 | Human Anatomy and Physiology I | 3 |
| BIO-108 | Human Anatomy and Physiology I Lab | 1 |
| ENG-101 | English Composition I | 3 |
| MTR-100 | Medical Terminology | 1 |
| PTA-103 | Introduction to Physical Therapy for the Physical Therapist Assistant | 2 |
| PSY-101 | General Psychology | 3 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 13** |
|---|---|---|
| ART-131 | Prosthetics Design | 3 |
| BIO-109 | Human Anatomy and Physiology II | 3 |
| BIO-110 | Human Anatomy and Physiology II Lab | 1 |
| HUM Elective | Humanities Elective (CSM-105 or HMN-101) | 3 |
| MAT-121 | Introduction to Statistics | 3 |

| **Term 3 (Fall)** | | **Credits: 14** |
|---|---|---|
| PTA-151 | Patient Care | 2 |
| PTA-152 | Patient Care Lab | 1 |
| PTA-153 | Physical Therapy Procedures | 2 |
| PTA-154 | Physical Therapy Procedures Lab | 1 |
| PTA-155 | Principles of Therapeutic Exercise | 1 |
| PTA-156 | Principles of Therapeutic Exercise Lab | 1 |
| PTA-221 | Pathophysiology | 2 |
| PTA-223 | Applied Kinesiology | 3 |
| PTA-224 | Applied Kinesiology Lab | 1 |

| **Term 4 (Spring)** | | **Credits: 14** |
|---|---|---|
| PTA-255 | Interventions in Musculoskeletal | 3 |
| PTA-256 | Interventions in Musculoskeletal Lab | 1 |
| PTA-257 | Interventions in Neurology | 3 |
| PTA-258 | Interventions in Neurology Lab | 1 |
| PTA-259 | Topics in Rehabilitation | 3 |
| PTA-260 | Topics in Rehabilitation Lab | 1 |
| PTA-270 | Clinical Experience I | 2 |

| **Term 5 (Summer)** | | **Credits: 12** |
|---|---|---|
| PTA-280 | Clinical Experience II | 5 |
| PTA-290 | Clinical Experience III | 6 |
| PTA-295 | Professional Seminar | 1 |

# Radiologic Technology (AS)

## Program Objective

The Radiologic Technology program prepares students for entry-level positions in a hospital or outpatient clinical setting. Graduates will be prepared to take the national certification for the American Registry of Radiologic Technologists (ARRT) examination to become a registered technologist.

## Career Opportunities

Graduates can work as technologists in hospitals, medical service centers, and outpatient imaging centers, or with additional training and education, career advancement into other imaging modalities is possible.

The Radiologic Technology program at Johnson College offers several career and employment post-graduation paths. Upon successfully passing the ARRT national certification examination, students may continue their education in a nine-month certificate program in MRI or CT scanning.

Students may also further their education to complete an online Bachelor of Science degree in Applied Health Studies (BAH) through an articulation agreement with Pennsylvania College of Technology.

## Program Mission Statement

The mission of the Radiologic Technology Program at Johnson College is to develop competent, professional radiographers whose expertise will meet the community they serve by providing patient-centered care in a professional, compassionate and responsible manner.

## Program Vision Statement

The vision of the Radiologic Technology Program is consistent with the vision of Johnson College. The vision of the Radiologic Technology Program is to achieve excellence by the means of the outcome of assessments and continuous improvement. Johnson College will provide the students with the industrial skills and learning opportunities to foster critical thinking and problem solving.

## What do Radiologic Technologists do?

The Radiologic Technologist must be well educated in:

| | | |
|---|---|---|
| -Anatomy | -Patient positioning | -Exam techniques |
| -Equipment protocols | -Radiation safety | -Radiation protection |
| -Basic patient care | | |

The technologist will be responsible for patient assessment and preparation for radiologic procedures and image production. You are an important part of the diagnostic team responsible for producing a quality diagnostic image. The physicians that are specialized in the field of radiology (Radiologists) interpret these images to obtain an accurate diagnosis to rule out disease, injury, and develop a course of treatment.

## Programmatic Accreditation

The Radiologic Technology program is accredited by:

Joint Review Committee on Education in Radiologic Technology (JRCERT)
20 North Wacker Drive, Suite 2850
Chicago, IL 60606-3182
(312) 704-5300
mail@jrcert.org
www.jrcert.org

**Program Learning Goals:**

**Goal 1:** Graduates will demonstrate clinical competency.

**Student Learning Outcomes** - Students will:

- Exhibit competence in positioning skills
- Provide appropriate patient care
- Practice safe radiation techniques

**Goal 2:** Graduates will utilize critical thinking skills.

**Student Learning Outcomes** - Students will:

- Be able to assess patient condition and adjust the procedures accordingly
- Be able to critique radiographic images to ensure acceptable diagnostic quality

**Goal 3:** Graduates will demonstrate effective communication skills.

**Student Learning Outcomes** - Students will:

- Demonstrate the effective use of verbal communication
- Demonstrate the ability to communicate effectively in writing

**Special Admissions Requirements**

A minimal Scholastic Aptitude Test (SAT) score of 900 for combined math and verbal or a minimal American College Test (ACT) of 20 is required for admission. The writing component of the SAT will be reviewed by the Enrollment Office and may assist in determining placement and/or admission to the College. Applicants must take either Biology or Physics and attain a grade of "C" or higher.

Students must meet the following minimum requirements:

- SAT scores (500 on either section) or ACT scores (Composite score of 18) or Next Generation Accuplacer score (250 in Arithmetic and Writing)
- GPA 3.00 or higher*
- 2 years of English with a "B-" or higher*
- 1 year of Algebra I with a "B-" or higher*
- 1 year of Algebra II with a "B-" or higher*
- 1 year of Biology with a "B-" or higher*
- Recommended: 1 year of an additional life science or Physics with a "B-" of higher*
- Radiologic Technology Questionnaire

**Retention**

Students are required to show both didactic and clinical progression each term in order to progress through the Radiologic Technology program:

- The student **MUST PASS** each Radiologic didactic course, as well as related courses MTR-100, BIO-107, BIO-108, BIO-109 and BIO-110 with a grade of a B- (80%) or higher.
- In order to successfully pass each RAD course and progress through the program, students must:
    - receive an 80% or higher in each lecture and lab portion of the course
    - receive an overall grade of 80% or higher
    - achieve a written exam average (written exams + final exam) of 80% or higher
    - complete all skill checklists
    - pass each Practical Exam with 80% or higher
    - demonstrate appropriate professional behaviors as assessed by the Professional Behavior Assessment Form

If any of the above criteria are not met, students may fail the course and will not be able to progress in the Radiology program. If students do not obtain an 80 written exam average, but meet all of the other criteria, the students' grade will be based on the written exam average. A student who fails the practical will receive an F in the course.

- The student **MUST PASS** each of the four clinical education courses (RAD-163, RAD-165, RAD-251, RAD-259).
- The student **MUST PASS** all laboratory practical exams, with a grade of at least 80% or better.
- The student **MUST** demonstrate appropriate Professional Behaviors

Please refer to the **Radiologic Technology Student Handbook** for further information.

Throughout the program of study, students are required to maintain a career Grade Point Average (CGPA) of at least 2.00 and a minimum grade of 2.67 (B-) in each Radiologic Technology major course in order to remain in the program. Students who do not meet the GPA requirements for Radiologic Technology subjects will be placed on Academic Probation as outlined in the **Radiologic Technology Student Handbook** at the instructor's discretion.

**Clinical Practicums**

Clinical practicum rotations at approved sites must be completed. Students must satisfy the clinical requirements of both Johnson College and the clinical provider as a condition of graduation. Clinical sites require criminal background checks, fingerprinting, child abuse clearance and drug testing. Clinical sites may bar students from clinical rotations if a criminal record exists or a drug test has a positive result.

**Student Handbook**

Radiologic Technology students are responsible for reading and abiding by all policies and procedures in the **Radiologic Technology Student Handbook.**

# Radiologic Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 47** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| BIO-107 | Human Anatomy and Physiology I | 3 |
| BIO-109 | Human Anatomy and Physiology II | 3 |
| MTR-100 | Medical Terminology | 1 |
| RAD-151 | Radiologic Positioning I | 3 |
| RAD-152 | Radiologic Positioning I Lab | 1 |
| RAD-153 | Radiologic Exposures and Principles I | 4 |
| RAD-155 | Patient Care I | 2 |
| RAD-157 | Radiologic Positioning II | 2 |
| RAD-158 | Radiologic Positioning II Lab | 1 |
| RAD-159 | Radiologic Exposures and Principles II | 3 |
| RAD-161 | Patient Care II | 2 |
| RAD-163 | Clinical Practicum I | 2 |
| RAD-165 | Clinical Practicum II | 4 |
| RAD-251 | Clinical Practicum III | 2 |
| RAD-253 | Radiation Biology and Protection | 3 |
| RAD-255 | Image Analysis | 2 |
| RAD-259 | Clinical Practicum IV | 3 |
| RAD-261 | Radiologic Pathology | 2 |
| RAD-263 | Advanced Medical Imaging | 2 |
| RAD-295 | Professional Seminar | 2 |

| **Core Career** | | **Total: 23** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| Elective (ART) | Art Elective | 3 |
| ENG-101 (COM) | English Composition I | 3 |
| Elective (COM) | Communication Elective | 3 |
| HMN-101 (HUM) | Introduction to Humanities | 3 |
| MAT-101 (MAT) | College Algebra I and Trigonometry | 3 |
| PHY-101 (SCI) | Introductory Physics | 3 |
| Elective (SOC) | Social Science Elective | 3 |
| BIO-108 (TECH) | Human Anatomy and Physiology I Lab | 1 |
| BIO-110 (TECH) | Human Anatomy and Physiology II Lab | 1 |

| **Grad Req** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **Radiologic Technology Program Total** | **71** |
|---|---|

# Radiologic Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 19** |
|---|---|---|
| BIO-107 | Human Anatomy and Physiology I | 3 |
| BIO-108 | Human Anatomy and Physiology I Lab | 1 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| MTR-100 | Medical Terminology | 1 |
| RAD-151 | Radiologic Positioning I | 3 |
| RAD-152 | Radiologic Positioning I Lab | 1 |
| RAD-153 | Radiologic Exposures and Principles I | 4 |
| RAD-155 | Patient Care I | 2 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 17** |
|---|---|---|
| BIO-109 | Human Anatomy and Physiology II | 3 |
| BIO-110 | Human Anatomy and Physiology II Lab | 1 |
| ENG-101 | English Composition I | 3 |
| RAD-157 | Radiologic Positioning II | 2 |
| RAD-158 | Radiologic Positioning II Lab | 1 |
| RAD-159 | Radiologic Exposures and Principles II | 3 |
| RAD-161 | Patient Care II | 2 |
| RAD-163 | Clinical Practicum I | 2 |

| **Term 3 (Summer)** | | **Credits: 4** |
|---|---|---|
| RAD-165 | Clinical Practicum II | 4 |

| **Term 4 (Fall)** | | **Credits: 16** |
|---|---|---|
| COM Elective | Communication Elective | 3 |
| PHY-101 | Introductory Physics | 3 |
| RAD-251 | Clinical Practicum III | 2 |
| RAD-253 | Radiation Biology and Protection | 3 |
| RAD-255 | Image Analysis | 2 |
| SOC Elective | Social Science Elective | 3 |

| **Term 5 (Spring)** | | **Credits: 15** |
|---|---|---|
| ART Elective | Art Elective | 3 |
| HMN-101 | Introduction to Humanities | 3 |
| RAD-259 | Clinical Practicum IV | 3 |
| RAD-261 | Radiologic Pathology | 2 |
| RAD-263 | Advanced Medical Imaging | 2 |
| RAD-295 | Professional Seminar | 2 |

# Veterinary Nursing (AS)

## Program Objective

The Veterinary Nursing program prepares students to join an animal-care team as entry-level technicians. Technicians collect samples, perform lab tests, take radiographs, prepare the surgical suite, assist in surgery, monitor anesthesia, provide general nursing care to patients, and assume other clinical duties. Second-year students complete clinical rotations in the Animal Care Center, a pet wellness center on the campus of Johnson College. The program prepares students to become Certified Veterinary Technicians (CVT) upon passing the Veterinary Technician National Exam (VTNE).

## Career Opportunities

Graduates work in many areas of veterinary medicine such as small and large animal clinics, research facilities, academia, zoos, laboratories, pharmaceutical companies, and government agencies such as the United States Department of Agriculture (USDA).

## Program Learning Goals

**Goal 1:** Graduates will be able to function as an entry-level certified veterinary technician in a variety of clinical settings.

**Student Learning Outcomes** - Students will:

- Demonstrate competence in the skills needed as outlined by the CVTEA, Policies & Procedures Manual, Appendix G, and required tasks for licensure/certification as an entry level Veterinary Nursing Technician
- Demonstrate preparedness and knowledge of skills based on the 10 VTNE prep exam domain scores
- Conduct themselves in a manner in accordance with the standards set forth by the AVMA-CVTEA & the Johnson College Veterinary Nursing Program for a Veterinary Technician

**Goal 2:** Graduates will develop analytical, critical thinking, decision-making and psychomotor skills necessary to perform in the animal health care industry.

**Student Learning Outcomes** - Students will:

- Demonstrate competency in medical nursing, surgical nursing & anesthetic nursing
- Competently perform laboratory procedures
- Demonstrate proficiency in a pharmacy setting and understand pharmacologic concepts
- Produce diagnostic images and understand radiologic concepts

**Goal 3:** Graduates will contribute as an integral member of a veterinary health care team while adhering to professional and ethical standards including compassion for clients and animals and personal responsibility.

**Student Learning Outcomes** - Students will:

- Demonstrate competence is performing hospital and office procedures, maintaining client relations and public communication
- Effectively communicate with the veterinary health care team and maintain a safe work environment for clients, animals and staff
- Demonstrate understanding of the laws, ethics and professional organizations that govern the veterinary profession

**Goal 4:** Graduates will obtain the required skills to practice health promotion and animal disease prevention.

**Student Learning Outcomes** - Students will:

- Recognize significant zoonotic and animal diseases and the appropriate diagnostics, treatments and prevention of those diseases
- Contribute to improved public health by promoting biosecurity measures and disease prevention through communication with clients

**Immunizations & Scrubs**

In addition to tuition and fees, students are responsible for the costs of immunizations. Veterinary Nursing students will be required to purchase two sets of Johnson College scrubs to be worn during VET-275/277. The student will also be required to wear these scrubs during the entire 5-week internship (VET-299). The uniform company will come onto campus to fit the students and place orders.

**Programmatic Accreditation**

The Veterinary Nursing program is accredited by the American Veterinary Medical Association (AVMA).

**Special Admissions Requirements**

A minimal high school grade point average (GPA) of 2.5 along with a minimal Scholastic Aptitude Test (SAT) score of 900 (math and verbal) total or; Placement Exam in lieu of SAT scores or; a minimal American College Test (ACT) of 18 is required for admission.

- 1 year of Algebra with a 76% or higher
- 2 year of English with a 76% or higher
- 2 years of Biology or a Life Science with a 76% or higher
- Recommended: 1 year of Chemistry with a 76% or higher

Applicants must take 2 years of Biology and/or Life Sciences, and attain a grade of 76% or higher. A completed Veterinary Nursing questionnaire must be submitted and ten hours of observation at a veterinary clinic is required. Any personal references must be from a veterinarian/veterinary staff or animal husbandry individual.

**Special Program Enrollment Requirements**

Prior to the start of the first term, students must provide proof of current tetanus and rabies inoculations. The Center for Disease Control considers individuals working with animals (including veterinarians and their staff) to be in the high-risk category. The CDC's recommendation for these individuals is to obtain a primary course of rabies vaccinations followed by serologic testing or booster vaccination every two years. Rabies inoculation is required in order to participate in any laboratory and clinical activities involving animals.

**Academic Progression Policy**

Students are required to show both didactic and clinical development each term in order to progress through the Veterinary Nursing Program and must meet the following criteria.

- Students MUST PASS each VET/MAT-205 didactic course and laboratory/clinical course with a final grade of at least C+ (76%) or higher.
- Students can retake a failed course once. If the student does not pass the course (C+ or better) on their second attempt, the student will be dismissed from the VEN program.
- Students cannot fail (final grade of C or lower) more than 2 VET courses (MAT-205 included).
- Students cannot withdraw from more than 2 VET courses (MAT-205 included) for academic deficiency reasons.

- Students must pass each major assessment (exam, final exam, research paper, case study, project, etc. as defined on course syllabi) for every VET course (MAT-205 included) with a grade of at least 76%.
- The following actions will occur if a student does not pass major assessments with a grade of at least 76%:
    1. Students who score less than a 76% on any major assessment must meet with the course instructor, review the assessment, develop a remediation/action plan and sign up for mandatory tutoring. *Failure to respond to the instructor request (feedback on D2L for the specific assessment) to schedule a meeting within 3 business days will result in a grade reduction for the assessment by 5% for each day.
    2. Students who score less than a 76% on a second major assessment must repeat step #1 above, meet with the Program Director to discuss the student's academic standing and ability to successfully complete the course and program.
    3. Students who score less than a 76% on a third major assessment will be required to withdraw from the course. See Course Withdrawal Policy below.
        - If this occurs after the JC withdrawal date (see academic calendar), the student must remain in the class, receive the highest possible grade of "C" regardless of actual grade earned, and will need to repeat the course.
- Failure to <u>complete</u> either steps #1 or #2 of the Policy, within 5 school days, will result in a 5% penalty on that assessment, every day until the step(s) are completed. The course instructor has the right to waive the penalty based on the situation (student illness, emergency, etc.).
- Successfully complete all items listed on the AVMA Essential Skills List as authorized by the course instructor.
- The student MUST maintain a GPA each term of 2.33 or greater, in VET/MAT-205 courses, or be placed on academic probation.
- The student MUST demonstrate appropriate professional behaviors according to the Professional Conduct Policy and the Veterinary Nursing Code of Ethics.
- The final decision is at the discretion of the Program Director.

*If a student fails to meet the criteria listed above, their academic standing in the Veterinary Nursing Program may be affected, including, but not limited to delayed expected date of graduation, academic probation, and/or academic dismissal. Please refer to the Johnson College catalog for more information regarding program scope and sequence and policies.*

**Course Withdrawal Policy**

Any student who withdraws from a course (lecture or lab) during a term will be allowed to complete the matched lecture or lab course that term. When a student withdraws from a lecture course, that lecture course must be retaken for a letter grade. The matched lab course, if completed successfully, will not need to be retaken. When a student withdraws from a lab course, that lab course must be retaken for a letter grade and the matched lecture course must be retaken as an audited course. Students who withdraw from matched lecture and lab courses must retake both courses for a letter grade.

**Internship**

A five-week internship at an approved site must be completed after the last term of the second year. Students must satisfy the internship requirements of both Johnson College and the internship provider as a condition of graduation.

Some internship sites may require a criminal background check and/or a drug test. Internship sites may bar students from an internship if a criminal record exists or a drug test has a positive result. Costs for travel to and from an internship site are the responsibility of the student.

**Student Handbook**

Veterinary Nursing students are responsible for reading and abiding by all policies and procedures in the Veterinary Nursing Student Handbook.

# Veterinary Nursing

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 50** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| MAT-205 | Medicine and Mathematics | 2 |
| VET-153 | Clinical Applications for Large Animals | 2 |
| VET-154 | Clinical Applications for Large Animals Lab | 1 |
| VET-155 | Clinical Applications for Small Animals | 2 |
| VET-156 | Clinical Applications for Small Animals Lab | 1 |
| VET-157 | Animal Anatomy and Physiology I | 3 |
| VET-158 | Animal Anatomy and Physiology I Lab | 1 |
| VET-159 | Animal Anatomy and Physiology II | 3 |
| VET-160 | Animal Anatomy and Physiology II Lab | 1 |
| VET-161 | Parasitology and Microbiology | 2 |
| VET-162 | Parasitology and Microbiology Lab | 1 |
| VET-251 | Pharmacology and Anesthesia | 3 |
| VET-253 | Clinical Pathology | 2 |
| VET-254 | Clinical Pathology Lab | 1 |
| VET-259 | Surgical Nursing I | 2 |
| VET-263 | Surgical Nursing II | 2 |
| VET-267 | Veterinary Radiology | 1 |
| VET-268 | Veterinary Radiology Lab | 1 |
| VET-269 | Intensive Care Applications | 3 |
| VET-271 | Diseases and Zoonoses | 3 |
| VET-275 | Clinical Rotation – Surgery | 3 |
| VET-277 | Clinical Rotation – Medicine | 3 |
| VET-280 | Kennel Rotation I | 1 |
| VET-282 | Kennel Rotation II | 1 |
| VET-295 | Veterinary Technology Professional Seminar | 1 |
| VET-299 | Internship | 4 |

| **Core Career** | | **Total: 20** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-131 (ART) | Prosthetics Design | 3 |
| Elective (COM) | Communications Elective | 3 |
| VET-151 (HUM) | Introduction to Veterinary Technology/Clinical Management | 1 |
| MAT-101 (MAT) | College Algebra I and Trigonometry | 3 |
| CHM-101 (SCI) | Fundamentals of Chemistry | 3 |
| CHM-102 (SCI) | Fundamentals of Chemistry Lab | 1 |
| CSM-105 (SOC) | Customer Service and Our World | 3 |
| Elective (TECH) | Technology Elective | 3 |

| **Grad Req** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **VEN Program Total** | **71** |
|---|---|

# Veterinary Nursing

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 16** |
|---|---|---|
| CHM-101/102 | Fundamentals of Chemistry/ Fundamentals of Chemistry Lab | 4 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| SSS-101 | First Year Experience | 1 |
| VET-151 | Introduction to Veterinary Technology/Clinical Management | 1 |
| VET-153/154<br>**OR** VET-155/156 | Clinical Applications for Large Animals/ Lab<br>**OR** Clinical Applications for Small Animals/ Lab | 3 |
| VET-157 | Animal Anatomy and Physiology I | 3 |
| VET-158 | Animal Anatomy and Physiology I Lab | 1 |

| **Term 2 (Spring)** | | **Credits: 15** |
|---|---|---|
| MAT-205 | Medicine and Mathematics | 2 |
| TECH Elective | Technology Elective | 3 |
| VET-153/154<br>**OR** VET-155/156 | Clinical Applications for Large Animals/ Lab<br>**OR** Clinical Applications for Small Animals/ Lab | 3 |
| VET-159 | Animal Anatomy and Physiology II | 3 |
| VET-160 | Animal Anatomy and Physiology II Lab | 1 |
| VET-161 | Parasitology and Microbiology | 2 |
| VET-162 | Parasitology and Microbiology Lab | 1 |

| **Term 3 (Fall)** | | **Credits: 18** |
|---|---|---|
| ART-131 | Prosthetics Design | 3 |
| COM Elective | Communications Elective | 3 |
| VET-251 | Pharmacology and Anesthesia | 3 |
| VET-253 | Clinical Pathology | 2 |
| VET-254 | Clinical Pathology Lab | 1 |
| VET-259 | Surgical Nursing I | 2 |
| VET-275<br>**OR** VET-277 | Clinical Rotation – Surgery<br>**OR** Clinical Rotation – Medicine | 3 |
| VET-280 | Kennel Rotation I | 1 |

| **Term 4 (Spring)** | | **Credits: 18** |
|---|---|---|
| CSM-105 | Customer Service and Our World | 3 |
| VET-263 | Surgical Nursing II | 2 |
| VET-267* | Veterinary Radiology | 1 |
| VET-268* | Veterinary Radiology Lab | 1 |
| VET-269 | Intensive Care Applications | 3 |
| VET-271 | Diseases and Zoonoses | 3 |
| VET-275<br>**OR** VET-277 | Clinical Rotation – Surgery<br>**OR** Clinical Rotation – Medicine | 3 |
| VET-282 | Kennel Rotation II | 1 |
| VET-295 | Veterinary Technology Professional Seminar | 1 |

*Must be taken concurrently with VET-275 in either Term 3 or 4

| **Term 5 (Summer)** | | **Credits: 4** |
|---|---|---|
| VET-299 | Internship | 4 |

# Welding Fabrication and Manufacturing Technology (AAS)

## Program Objective

The Associate of Applied Science in Welding Fabrication and Manufacturing Technology builds on the certificate program in which students learn about safety, hand tools, oxyacetylene torches, plasma arc, shielded metal arc welding (stick), gas metal arc welding (MIG), gas tungsten arc welding (TIG), flux cored arc welding, metallurgy, print reading, and weld symbols. The second year of the program focuses on fabrication and pipe welding, two high-demand areas in the welding industry.

## Work Environment

Graduates work as welders, welder/fabricators, maintenance welders, fitters, ornamental metal sculptors, and welder helpers. Typical employers include the Boilermakers union, departments of transportation, structural steel fabricators, custom metal shops, industrial contractors, shipyards, pipe and pressure vessel fabricators, and retail welding sales.

## Career Opportunities

- Welder
- Pipefitter
- Ironworker
- Maintenance Technician

## Program Learning Goals

**Goal 1:** The Welding program will prepare the student for entry level employment in welding.

**Student Learning Outcomes** - Students will:

- Demonstrate safe welding practices
- Perform basic welding skills in SMAW (stick), GMAW (MIG), GTAW (TIG), and oxyfuel cutting procedures
- Perform basic maintenance on welding machines
- Interpret basic welding symbols

**Goal 2:** Graduates will possess the skills necessary to obtain entry-level fabrication positions.

**Student Learning Outcomes** - Students will:

- Demonstrate safe fabricating practices
- Perform basic welding techniques in uphill pipe welding
- Perform basic metal cutting techniques
- Perform the skills needed in fabrication and manufacturing environments

**Goal 3:** Graduates will understand the importance of professional behavior within the welding industry.

**Student Learning Outcomes -** Graduates will:

- Communicate with internal and external stakeholder in a professional and appropriate manner
- Demonstrate professional skills as they relate to timeliness, accountability, and reliability

## Welding Fabrication and Manufacturing Technology

**2025-2026 Program Scope**

| **Program Requirements** | | **Total: 41** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| AMT-151 | Fundamentals of Metal Cutting | 2 |
| AMT-152 | Fundamentals of Metal Cutting Lab | 1 |
| AMT-153 | Subtractive Manufacturing | 1 |
| AMT-154 | Subtractive Manufacturing Lab | 2 |
| BTT-OSHA | OSHA 10 Construction Safety | 0 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| WFT-234 | Pipe Welding | 4 |
| WFT-251 | Introduction to Weld Testing | 1 |
| WFT-253 | Pipe Welding I Uphill | 1 |
| WFT-254 | Pipe Welding I Uphill Lab | 4 |
| WFT-257 | Introduction to Fabrication | 1 |
| WFT-258 | Introduction to Fabrication Lab | 3 |
| WTC-151 | Shielded Metal Arc Welding | 2 |
| WTC-152 | Shielded Metal Arc Welding Lab | 4 |
| WTC-153 | Gas Metal and Flux Cored Arc Welding I | 1 |
| WTC-154 | Gas Metal and Flux Cored Arc Welding I Lab | 2 |
| WTC-155 | Gas Metal and Flux Cored Arc Welding II | 1 |
| WTC-156 | Gas Metal and Flux Cored Arc Welding II Lab | 2 |
| WTC-157 | Gas Tungsten Arc Welding | 2 |
| WTC-158 | Gas Tungsten Arc Welding Lab | 4 |
| WTC-SMAW | AWS D1.1 SMAW 3G | 0 |

| **Core Career** | | **Total: 20** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-101 (ART) | Blueprint Reading | 2 |
| Elective (COM) | Communications Elective (COM-112 or CSM-105) | 3 |
| ENG-105 (HUM) | Industry Communication | 3 |
| MAT-100 (MAT) | Applied Mathematics for Welders | 3 |
| PHY-120 (SCI) | Physical Science | 3 |
| Elective (SOC) | Social Science Elective (BUS-101 or SCI-120) | 3 |
| CPT-101 (TECH) | Microcomputer I | 3 |

| **Graduation Requirement** | | **Total: 1** |
|---|---|---|
| SSS-101 | First Year Experience | 1 |

| **WFT Program Total** | **62** |
|---|---|

## Welding Fabrication and Manufacturing Technology

**2025-2026 Program Sequence**

| **Term 1 (Fall)** | | **Credits: 15** |
|---|---|---|
| ART-101 | Blueprint Reading | 2 |
| BTT-OSHA | OSHA 10 Construction Safety | 0 |
| MAT-100 | Applied Mathematics for Welders | 3 |
| SSS-101 | First Year Experience | 1 |
| WTC-151 | Shielded Metal Arc Welding | 2 |
| WTC-152 | Shielded Metal Arc Welding Lab | 4 |
| WTC-153 | Gas Metal and Flux Cored Arc Welding I | 1 |
| WTC-154 | Gas Metal and Flux Cored Arc Welding I Lab | 2 |

| **Term 2 (Spring)** | | **Credits: 15** |
|---|---|---|
| CPT-101 | Microcomputer I | 3 |
| ENG-105 | Industry Communication | 3 |
| WTC-155 | Gas Metal and Flux Cored Arc Welding II | 1 |
| WTC-156 | Gas Metal and Flux Cored Arc Welding II Lab | 2 |
| WTC-157 | Gas Tungsten Arc Welding | 2 |
| WTC-158 | Gas Tungsten Arc Welding Lab | 4 |

| **Term 3 (Fall)** | | **Credits: 15** |
|---|---|---|
| AMT-151 | Fundamentals of Metal Cutting | 2 |
| AMT-152 | Fundamentals of Metal Cutting Lab | 1 |
| COM Elective | Communications Elective (COM-112 or CSM-105) | 3 |
| PHY-120 | Physical Science | 3 |
| WFT-251 | Introduction to Weld Testing | 1 |
| WFT-253 | Pipe Welding I Uphill | 1 |
| WFT-254 | Pipe Welding I Uphill Lab | 4 |
| WTC-SMAW | AWS D1.1 SMAW 3G | 0 |

| **Term 4 (Spring)** | | **Credits: 17** |
|---|---|---|
| AMT-153 | Subtractive Manufacturing | 1 |
| AMT-154 | Subtractive Manufacturing Lab | 2 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| SOC Elective | Social Science Elective (BUS-101 or SCI-120) | 3 |
| WFT-234 | Pipe Welding | 4 |
| WFT-257 | Introduction to Fabrication | 1 |
| WFT-258 | Introduction to Fabrication Lab | 3 |

## Building and Property Maintenance (Certificate)

The Building and Property Maintenance certificate program will prepare students to enter the workforce ready to perform general maintenance and upkeep on buildings and properties. Students will learn basic maintenance and repair skills required in the upkeep of building and property systems. Instruction includes areas such as air conditioning, heating, plumbing, electrical, and major appliances, grounds keeping, computer skills and customer service

Graduates work as maintenance mechanics, general maintenance workers, grounds keepers and maintenance technicians.

Typical employers are hotels, government entities, educational institutions, retirement communities, resorts, healthcare facilities and apartment complexes.

**Program Learning Goals**

**Goal 1:** Graduates will possess the skills necessary to obtain entry-level maintenance positions.

**Student Learning Outcomes** - Students will:

- Demonstrate competency in basic electrical skills
- Demonstrate competency in basic carpentry skills
- Demonstrate competency in basic maintenance
- Practice safe working conditions according to OSHA standards

**Goal 2:** Graduates will develop critical thinking skills for troubleshooting and prioritizing tasks.

**Student Learning Outcomes** - Students will:

- Demonstrate the ability to identify maintenance requirements, including preventative maintenance and repair needs
- Prioritize tasks for efficient repair and maintenance of property and buildings

**Goal 3:** Graduates will develop customer service and communication skills.

**Student Learning Outcomes** - Students will:

- Develop clear and effective written and oral communication skills
- Develop skills necessary to serve internal and external customers with respect and exceptional service
- Develop the employability skills necessary to become a productive member of the workforce
- Enhance computer skills to facilitate effective communication requirements

# Building and Property Maintenance

## 2025-2026 Program Scope

| **Program Requirements** | | **Total: 32** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-110 | Contract Drawings | 3 |
| BPM-101 | Basics of Property Maintenance | 3 |
| BPM-151 | Building Finishes | 2 |
| BPM-152 | Building Finishes Lab | 4 |
| BTT-103 | Introduction to Pipefitting | 2 |
| BTT-105 | Introduction to Electricity for the Trades | 1 |
| BTT-106 | Introduction to Electricity for the Trades Lab | 2 |
| BTT-151 | Fundamentals of Electricity | 2 |
| BTT-152 | Fundamentals of Electricity Lab | 2 |
| BTT-OSHA | OSHA 10 Construction Safety Certification | 0 |
| CPT-101 | Microcomputer I | 3 |
| CSM-105 | Customer Service and Our World | 3 |
| ENG-105 | Industry Communication | 3 |
| MAT-123 | Math for Carpenters | 1 |
| SSS-101 | First-Year Experience | 1 |

| **BPM Program Total** | **32** |
|---|---|

## 2025-2026 Program Sequence

| **Term 1 (Fall)** | | **Credits: 15** |
|---|---|---|
| ART-110 | Contract Drawings | 3 |
| BPM-101 | Basics of Property Maintenance | 3 |
| BTT-103 | Introduction to Pipefitting | 2 |
| BTT-105 | Introduction to Electricity for the Trades | 1 |
| BTT-106 | Introduction to Electricity for the Trades Lab | 2 |
| BTT-OSHA | OSHA 10 Construction Safety Certification | 0 |
| ENG-105 | Industry Communication | 3 |
| SSS-101 | First-Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 17** |
|---|---|---|
| BPM-151 | Building Finishes | 2 |
| BPM-152 | Building Finishes Lab | 4 |
| BTT-151 | Fundamentals of Electricity | 2 |
| BTT-152 | Fundamentals of Electricity Lab | 2 |
| CSM-105 | Customer Service and Our World | 3 |
| CPT-101 | Microcomputer I | 3 |
| MAT-123 | Math for Carpenters | 1 |

## Cybersecurity Analytics and Operations (Certificate)

The Cybersecurity Analytics and Operations certificate program prepares students for entry-level positions in the growing field of information security. Students will develop practical skills in system troubleshooting, basic maintenance, and applying security tools to protect networks and IT systems. The program emphasizes hands-on learning in areas such as identifying system vulnerabilities, responding to security incidents, performing penetration testing, monitoring network activity, supporting disaster recovery, and following industry best practices in cybersecurity.

Graduates work as network associates, incident handlers, information security analysts, information technology auditors, and digital forensic examiners.

Typical employers include IT support companies, government agencies, educational institutions, healthcare facilities, financial organizations, and other business enterprises.

### Program Learning Goals

**Goal 1:** Graduates will possess the skills necessary to obtain entry-level cybersecurity positions.

**Student Learning Outcomes** – Students will:

- Demonstrate competency in basic cyber security skills
- Demonstrate competency in a wide range of cyber security tools and techniques
- Practice incident handling and implementing response for security measures
- Demonstrate basic maintenance and upkeep for systems and networks

**Goal 2:** Graduates will develop critical thinking and analysis skills to understand troubleshooting and diagnostics, security policies, and apply best practices.

**Student Learning Outcomes** – Students will:

- Demonstrate competency in basic cybersecurity best practices
- Develop methods to enforce cybersecurity policies and procedures
- Understand regulatory and legal requirements related to cybersecurity
- Apply industry best practices to ensure protection of information systems and data

**Goal 3:** Graduates will develop effective support service and communication skills.

**Student Learning Outcomes** – Students will:

- Develop clear and effective written and oral communication skills
- Develop skills to approach complex cyber security challenges with problem-solving mindsets
- Identify vulnerabilities, analyze threats, and develop responses to protect organizations against evolving security risks
- Address immediate and long-term cybersecurity concerns

## Cybersecurity Analytics & Operations

### 2025-2026 Program Scope

| **Program Requirement** | | **Total: 33** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-115 | Web Programming, Client-Side Scripting | 2 |
| ART-116 | Web Programming, Client-Side Scripting Lab | 1 |
| CSA-101 | Introduction to Cybersecurity | 3 |
| CSA-103 | Networking Fundamentals | 3 |
| CSA-121 | Ethical Hacking and Penetration Testing | 3 |
| CSA-123 | Cybersecurity Policy and Governance | 3 |
| CSA-141 | Cryptography and Data Security | 3 |
| CSA-143 | Incident Response and Digital Forensics | 3 |
| CSA-151<br>**OR** CIT-189/190 | Cloud Security<br>**OR** Information System Security Design and Administration/ Lab | 3 |
| ENG-105 | Industry Communication | 3 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| MEC-103 | Project Management | 2 |
| SSS-101 | First Year Experience | 1 |

| **CSA Program Total** | **33** |
|---|---|

### 2025-2026 Program Sequence

| **Term 1 (Fall)** | | **Credits: 16** |
|---|---|---|
| ART-115 | Web Programming, Client-Side Scripting | 2 |
| ART-116 | Web Programming, Client-Side Scripting Lab | 1 |
| CSA-101 | Introduction to Cybersecurity | 3 |
| CSA-103 | Networking Fundamentals | 3 |
| CSA-121 | Ethical Hacking and Penetration Testing | 3 |
| CSA-123 | Cybersecurity Policy and Governance | 3 |
| SSS-101 | First Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 17** |
|---|---|---|
| CSA-141 | Cryptography and Data Security | 3 |
| CSA-143 | Incident Response and Digital Forensics | 3 |
| CSA-151<br>**OR** CIT-189/190 | Cloud Security<br>**OR** Information System Security Design and Administration/ Lab | 3 |
| ENG-105 | Industry Communication | 3 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| MEC-103 | Project Management | 2 |

# Diesel Preventative Maintenance Technology (Certificate)

The Diesel Preventative Maintenance Technician program prepares students to enter the workforce ready to perform routine repair procedures, preventive maintenance, and safety applications. Graduates work as brake technicians as well as perform routine maintenance and make general repairs.

Typical employers of Diesel Preventative Maintenance technicians are truck, farm, and earth-moving equipment dealerships; trucking companies; truck service centers; engine repair/machine shops; truck equipment distributors; independent service garages.

**Program Learning Goals**

**Goal 1:** Graduates will possess the appropriate skills and safety awareness that are needed for entry into the diesel preventative maintenance field.

**Student Learning Outcomes** - Students will:

- Understand the use of proper safety equipment, for both themselves and shop practices
- Visualize situations to predict any concerns before attempting them
- Identify and select the appropriate tools for the job at hand
- Perform preventative maintenance on light and heavy trucks

# Diesel Preventative Maintenance Technology

## 2025-2026 Program Scope

| **Program Requirements** | | **Total: 33** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| CPT-101 | Microcomputer I | 3 |
| DTT-153 | Brake Systems for Diesel | 2 |
| DTT-154 | Brake Systems for Diesel Lab | 1 |
| DTT-155 | Steering and Suspension Systems for Diesel | 3 |
| DTT-159 | Advanced Electrical Systems for Diesel | 2 |
| DTT-160 | Advanced Electrical Systems for Diesel Lab | 1 |
| DTT-177 | Diesel Fuel Injection and Emissions | 2 |
| DTT-178 | Diesel Fuel Injection and Emissions Lab | 1 |
| DTT-179 | Diesel Engine Performance and Tune-up Procedures | 2 |
| DTT-180 | Diesel Engine Performance and Tune-up Procedures | 2 |
| ENG-101<br>**OR** ENG-105 | English Composition I<br>**OR** Industry Communication | 3 |
| IET-101 | Introduction to Diesel Electricity and Electronics | 3 |
| MAT-101<br>**OR** MAT-105 | College Algebra I and Trigonometry<br>**OR** Math for Transportation Division | 3 |
| SSS-101 | First-Year Experience | 1 |
| VMR-151 | Introduction to Vehicle Maintenance and Repair Technology | 2 |
| VMR-161 | Welding and Flame Cutting for Vehicles | 1 |
| VMR-162 | Welding and Flame Cutting for Vehicles Lab | 2 |

| **DPM Program Total** | **33** |
|---|---|

## 2025-2026 Program Sequence

| **Term 1 (Fall)** | | **Credits: 17** |
|---|---|---|
| DTT-153 | Brake Systems for Diesel | 2 |
| DTT-154 | Brake Systems for Diesel Lab | 1 |
| DTT-155 | Steering and Suspension Systems for Diesel | 3 |
| IET-101 | Introduction to Diesel Electricity and Electronics | 3 |
| MAT-101<br>**OR** MAT-105 | College Algebra I and Trigonometry<br>**OR** Math for Transportation Division | 3 |
| SSS-101 | First-Year Experience | 1 |
| VMR-151 | Introduction to Vehicle Maintenance and Repair Technology | 2 |
| VMR-161 | Welding and Flame Cutting for Vehicles | 1 |
| VMR-162 | Welding and Flame Cutting for Vehicles Lab | 2 |

| **Term 2 (Spring)** | | **Credits: 16** |
|---|---|---|
| CPT-101 | Microcomputer I | 3 |
| DTT-159 | Advanced Electrical Systems for Diesel | 2 |
| DTT-160 | Advanced Electrical Systems for Diesel Lab | 1 |
| DTT-177 | Diesel Fuel Injection and Emissions | 2 |
| DTT-178 | Diesel Fuel Injection and Emissions Lab | 1 |
| DTT-179 | Diesel Engine Performance and Tune-up Procedures | 2 |
| DTT-180 | Diesel Engine Performance and Tune-up Procedures | 2 |
| ENG-101<br>**OR** ENG-105 | English Composition I<br>**OR** Industry Communication | 3 |

# Industrial Technology (Certificate)

Industrial technicians keep machines in working order by detecting and correcting errors before the machine or the products it produces are damaged. After diagnosing a problem, the industrial machinery mechanic may take the equipment apart to repair or replace the necessary parts. Once a repair is made, industrial mechanics test a machine to ensure that it is operating correctly.

Graduates will be to work in machine or fabrication shops and distribution warehouses.

**Program Learning Goals**

**Goal 1:** Graduates will acquire the skills necessary to obtain an entry-level position in the Industrial Electronic Maintenance.

**Student Learning Outcomes** - Students will:

- Perform tasks in accordance to OSHA guidelines
- Recognize the effects of mechanical malfunctions
- Employ corrective actions to make repairs to system under test

**Goal 2:** Graduates will demonstrate professional behavior and ethics in order to meet the challenges of work within their field.

**Student Learning Outcomes** - Students will:

- Work in a team environment
- Acknowledge diversity as a benefit to all organizations
- Practice professionalism through consideration and respect for others

**Goal 3:** Graduates will acquire critical thinking and decision-making skills.

**Student Learning Outcomes** - Students will:

- Analyze various components of project requirements to develop solutions
- Make decisions based on skills and knowledge of industry inputs
- Effectively use software to help solve industry challenges

# Industrial Technology

## 2025-2026 Program Scope

| **Program Requirements** | | **Total: 34** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-105 | Blueprint/Schematic Reading | 3 |
| BTT-151 | Fundamentals of Electricity | 2 |
| BTT-152 | Fundamentals of Electricity Lab | 2 |
| BTT-251 | Motors & Controls | 2 |
| BTT-252 | Motors & Controls Lab | 4 |
| DTT-129 | Transportation Safety and Forklift | 2 |
| ECT-277 | Industrial Maintenance and Mechanics | 2 |
| ECT-278 | Industrial Maintenance and Mechanics Lab | 1 |
| ENG-101<br>**OR** ENG-105 | English Composition I<br>**OR** Industry Communication | 3 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| MEC-157 | Sensors and Systems in Automation | 2 |
| MEC-158 | Sensors and Systems in Automation Lab | 1 |
| MEC-201 | Applied Industrial Technology | 1 |
| MEC-202 | Applied Industrial Technology Lab | 2 |
| MEC-245 | Programmable Logic Controllers I | 2 |
| MEC-246 | Programmable Logic Controllers I Lab | 2 |
| SSS-101 | First-Year Experience | 1 |

| **IND Program Total** | **35** |
|---|---|

## 2025-2026 Program Sequence

| **Term 1 (Fall)** | | **Credits: 17** |
|---|---|---|
| BTT-151 | Fundamentals of Electricity | 2 |
| BTT-152 | Fundamentals of Electricity Lab | 2 |
| DTT-129 | Transportation Safety and Forklift | 2 |
| MEC-245 | Programmable Logic Controllers I | 2 |
| MEC-246 | Programmable Logic Controllers I Lab | 2 |
| ART-105 | Blueprint/Schematic Reading | 3 |
| MAT-101 | College Algebra I and Trigonometry | 3 |
| SSS-101 | First-Year Experience | 1 |

| **Term 2 (Spring)** | | **Credits: 18** |
|---|---|---|
| BTT-251 | Motors & Controls | 2 |
| BTT-252 | Motors & Controls Lab | 4 |
| ENG-101<br>**OR** ENG-105 | English Composition I<br>**OR** Industry Communication | 3 |
| ECT-277 | Industrial Maintenance and Mechanics | 2 |
| ECT-278 | Industrial Maintenance and Mechanics Lab | 1 |
| MEC-157 | Sensors and Systems in Automation | 2 |
| MEC-158 | Sensors and Systems in Automation Lab | 1 |
| MEC-201 | Applied Industrial Technology | 1 |
| MEC-202 | Applied Industrial Technology Lab | 2 |

# Welding Technology (Certificate)

The Welding Technology certificate course prepares students for entry-level work in the welding industry. Students learn about safety, hand tools, oxy-acetylene torches, plasma arc, shielded metal arc welding (stick), gas metal arc welding (MIG), gas tungsten arc welding (TIG), flux cored arc welding, metallurgy, print reading, and weld symbols.

Graduates work as welders, welder/fabricators, maintenance welders, fitters, ornamental metal sculptors, and welder helpers.

Typical employers in the welding industry include structural steel fabricators, custom metal shops, industrial contractors, shipyards, pipe and pressure vessel fabricators, and retail welding sales.

**Program Learning Goals**

**Goal 1:** The welding program will prepare the graduates for entry level employment in welding.

**Student Learning Outcomes -** Students will:

- Demonstrate safe welding practices
- Perform basic welding skills in SMAW (stick), GMAW (MIG), GTAW (TIG) and oxyfuel cutting procedures
- Perform basic maintenance on welding machines
- Interpret basic welding symbols

# Welding Technology

## 2025-2026 Program Scope

| **Program Requirements** | | **Total: 30** |
|---|---|---|
| *Course Code* | *Course Title* | *Credits* |
| ART-101 | Blueprint Reading | 2 |
| BTT-OSHA | OSHA 10 Construction Safety | 0 |
| CPT-101 | Microcomputer 1 | 3 |
| ENG-105 | Industry Communication | 3 |
| MAT-100 | Applied Mathematics for Welders | 3 |
| SSS-101 | First-Year Experience | 1 |
| WTC-151 | Shielded Metal Arc Welding | 2 |
| WTC-152 | Shielded Metal Arc Welding Lab | 4 |
| WTC-153 | Gas Metal and Flux Cored Arc Welding I | 1 |
| WTC-154 | Gas Metal and Flux Cored Arc Welding I Lab | 2 |
| WTC-155 | Gas Metal and Flux Cored Arc Welding II | 1 |
| WTC-156 | Gas Metal and Flux Cored Arc Welding II Lab | 2 |
| WTC-157 | Gas Tungsten Arc Welding | 2 |
| WTC-158 | Gas Tungsten Arc Welding Lab | 4 |

| **WTC Program Total** | **30** |
|---|---|

## 2025-2026 Program Sequence

| **Term 1 (Fall)** | | **Credits: 15** |
|---|---|---|
| ART-101 | Blueprint Reading | 2 |
| BTT-OSHA | OSHA 10 Construction Safety | 0 |
| MAT-100 | Applied Mathematics for Welders | 3 |
| SSS-101 | First-Year Experience | 1 |
| WTC-151 | Shielded Metal Arc Welding | 2 |
| WTC-152 | Shielded Metal Arc Welding Lab | 4 |
| WTC-153 | Gas Metal and Flux Cored Arc Welding I | 1 |
| WTC-154 | Gas Metal and Flux Cored Arc Welding I Lab | 2 |

| **Term 2 (Spring)** | | **Credits: 15** |
|---|---|---|
| CPT-101 | Microcomputer 1 | 3 |
| ENG-105 | Industry Communication | 3 |
| WTC-155 | Gas Metal and Flux Cored Arc Welding II | 1 |
| WTC-156 | Gas Metal and Flux Cored Arc Welding II Lab | 2 |
| WTC-157 | Gas Tungsten Arc Welding | 2 |
| WTC-158 | Gas Tungsten Arc Welding Lab | 4 |

# Workforce Advancement and Value-Added Education (WAVE) Offerings

## Automotive

### Northern Region Emissions Inspector Testing

The Pennsylvania Department of Transportation has developed an online training program for technicians to become certified in the Northern Region PA Vehicle Emissions Inspection and Maintenance (I/M) Program. Johnson College is approved by PennDOT to proctor the emissions testing. Please note: Only new inspectors and inspectors with expired certifications are required to attend a proctored exam.

### OBDII Emissions Training

This 8-hour non-credit course consists of classroom instruction followed by a computer-based competency exam (CBT) and then a multiple choice exam. The OBDII computer monitors a vehicle's emission control systems in real-time and is capable of informing a motorist or technician of a systemic issue the moment it occurs. Successful completion of the (OBD/EI) Inspector certification test allows the inspector to do any emission inspection in Pennsylvania. Currently that would include Northern Region visual, one speed idle test, two speed idle test, dyno, and OBD tests.

### PA State Safety Inspector Training

This 12-hour non-credit course includes a written test, and tactile test scheduled independently with the instructor. This course covers vehicle body condition, working electronics, fluid leaks, brake efficiencies, and more. All must be successfully completed before receiving certification from PennDOT.

## Computer

### Auto CAD (Computer Aid Design)

This 15-hour non-credit course is an introduction into Computer-Assisted Drafting. CAD software is used to increase the productivity of the designer, improve the quality of design, improve communications through documentation, and to create a database for manufacturing. This course explains basic CAD commands required to produce working drawings. Students will work with creating 2D objects, text usage, dimensioning, layer management, model/paper space, and plotting.

### Revit Basics

This 15-hour non-credit course is an introduction into Revit software. The software is used by architects, landscape architects, structural engineers, mechanical, electrical, and plumbing engineers, designers and contractors. This course explains the basic program interface, creating/manipulating levels, model creation, working with walls/roofs/windows, dimensions, and building sections.

## Healthcare

### Medical Assistant (MA)

This 260-hour non-credit program follows the National Health Association curriculum. The course covers Anatomy & Physiology, Medical Terminology, and Clinical Skills. In-person training provides hands-on instruction and practice designed to achieve competency. At the completion of the program students are eligible to sit for the proctored Certified Clinical Medical Assistant (CCMA) exam.

**Pharmacy Technician**

This 50-hour non-credit program will prepare students to work as a pharmacy technician in a retail or other pharmacy setting and to take the Pharmacy Technician Certification Board's PTCB exam. Through lectures and hands-on labs, students will become familiar with all of the processes and calculations that are needed to be successful in the field.

**Online MRI/CT**

These 9-month non-credit online training programs are designed to provide registered radiological technologists with the necessary knowledge of Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) Technologist along with the related clinical competencies to be eligible to sit for the national certification examination offered by the American Registry of Radiologic Technologists (ARRT).

## Manufacturing and Industry

**CNC Operator 285-hour Certificate**

This 285-hour non-credit program covers the theory and hands-on practice of computer numeric control lathes & mills. In addition to blueprint reading and machinist mathematics, emphasis on the use of metals and the stresses placed upon the metals will be taught.

**Basic Maintenance**

This 48-hour non-credit training provides introductory, hands-on training that is designed for those individuals who wish to learn home improvement and maintenance skills or those looking to upskill in their current occupation. The class topics include basic plumbing, electrical/wiring, framing, dry wall, and pest control. These skills can also be applied in the industrial setting.

## Occupational Safety and Health Administration (OSHA)

**OSHA 10**

This 10-hour non-credit training provides students with a comprehensive overview of general industry or construction workplace safety and health issues as they relate to OSHA standards, policies and procedures. This training is designed for entry-level workers, individuals who are new to their roles or those who need a basic understanding of safety policies and procedures. Upon successful completion of the training, attendees will receive an official OSHA General Industry or Construction Outreach Course Completion Card.

**OSHA 30 General Industry**

This 30-hour non-credit training is a more in-depth training, offering comprehensive coverage of workplace safety topics for both workers and supervisors. OSHA 30 provides a deeper understanding of hazards, regulations, and safety management, including additional topics and a broader scope. The OSHA 30-Hour is ideal for those in leadership roles or those seeking more extensive safety training. Upon successful completion of the training, attendees will receive an official OSHA 30 General Industry Outreach Course Completion Card.

**OSHA Powered Industrial Truck Operator (Forklift)**

The 8-hour non-credit forklift training course is designed to familiarize students with OSHA Powered Industrial Truck Operator Training Requirements (29 CFR Standard 1910.178 and ASME B56.1), provide

current training requirements under the newly adopted standards and to assist participants in becoming an authorized operator of forklifts through theory and tactile testing. Nine hours of instruction including pre-operational inspection, picking up, traveling and placing loads, parking procedures, and practical operation. Upon successful completion of the training, attendees will receive an official OSHA Powered Industrial Truck Operator Card.

## Welding

In partnership with Earlbeck Technologies, Johnson College is a welding training and testing facility.

### Fundamentals of Welding

This 36-hour non-credit course provides the foundation on which all of our courses are built. Students learn equipment set-up, basic techniques and safety for oxy-fuel welding and cutting; as well as Stick, TIG and MIG welding. In addition, the course discusses basic metallurgy, welding codes, welding inspection, and welding symbols.

### Intermediate Stick Welding

This 54-hour non-credit course provides specific instruction in the Shielded Metal Arc (SMAW) welding process. Students learn how to perform fillet and groove welds on carbon steel using E6010 and E7018 electrodes in all positions. Student practice is geared toward structural welding code vertical and overhead tests. Passing these tests provides an all position, limited thickness, AWS D1.1 welder certification.

### Intermediate TIG Welding

This 48-hour non-credit course provides specific instruction in the Gas Tungsten Arc Welding (GTAW) process. Students will learn how to perform flat, horizontal, and vertical fillet and flat groove welds on carbon steel, stainless steel and aluminum. Student practice is geared toward thin material applications. Included are certification tests to AWS D17.1 Aerospace Code for Carbon Steel, Stainless Steel and Aluminum.

### Intermediate MIG Welding

This 42-hour non-credit course provides specific instruction in the Gas Metal Arc (GMAW) and Flux-Cored Arc (FCAW) welding processes. Students will learn how to perform fillet and groove welds in all positions. Student practice is geared toward sheet metal and structural steel welding code vertical and overhead tests. Passing the certification test provides an all-position, limited thickness, AWS D1.1 welder certification in FCAW and vertical D1.3 structural sheet metal code certification in GMAW.

### Advanced Welding

This 48-hour non-credit course provides additional instruction to graduates of our Fundamentals and any one Intermediate Welding program or previously certified all position plate welders. This course is geared toward open root pipe welding in all positions and includes a 6G position ASME Pressure Vessel Code test. Advanced classes are available for Stick, MIG or TIG welding.

### Certification Testing

Johnson College, in conjunction with Earlbeck Gases & Technologies, is an AWS Accredited Test Facility (ATF). Certification testing is done to a specific code, which is selected based on the application and job requirements. Welding codes are written for a particular industry or product type such as Structural Steel, Sheet Metal, Aluminum or Stainless Steel; Boilers, Pressure Vessels and Piping Systems; Aerospace Welding; and many more. Each of these codes requires a welder to prove they are qualified by passing a

Welder Performance Qualification Test. This is a practical exam that tests your ability to make quality welds, and there is no written test for any commonly used code. Testing is held at the Johnson College welding facility by appointment only.

## Other Specialty Training

### Online Training

In conjunction with a well-known online-learning platform host, the WAVE department offers a diverse multitude of short-term, non-credit training. Such online training includes your choice of Healthcare; Software, IT & Web Development; Business; Management & Accounting; and Project Management & Quality Assurance. If necessary to the selected program, hard copy materials will be shipped to you at your address and access to all electronic content accompanies your eLearning program access. Learners have unlimited access to technical and program support through the training host's network of student mentors and instructor resources. Although not required to successfully complete your program, the goal of most of these programs is to prepare students for nationally-recognized certification.

### Specialized/Customized Industry Training

Johnson College and WAVE: Workforce Advancement and Value-Added Education take pride in collaborating with local industries to develop specialized instruction designed to assist those local employers with upskilling their current or anticipated workforce. Johnson College and industry leaders will work side-by-side in determining and developing the topics needed that will culminate in a structured training program designed to meet and exceed expectations.

### Workshops

WAVE: Workforce Advancement and Value-Added Education workshops are designed for individuals seeking basic skills and knowledge in key areas. These short-term, introductory sessions provide a hands-on, interactive learning experience that covers essential concepts and practical techniques. Ideal for beginners or those new to a specific topic, these workshops offer a solid starting point for building expertise and confidence. Participants will leave with the tools and understanding to apply their learning immediately in real-world situations.

# COURSE DESCRIPTIONS

| Course No. | Course Title | Credits |
|---|---|---|

**ADT-151** **Introduction to Computer-Assisted Drafting (CAD)** **2**
This course is an introductory course into Computer-Assisted Drafting. It explains basic CAD commands required to produce working drawings. Students will work with basic lines and editing commands to more complicated concepts in computer drafting. They will produce basic Floor Plans, Elevations, Sections and Details required in the residential drafting field. (*Co-requisite:* ADT-152) (ART, TECH | TC)

**ADT-152** **Introduction to Computer-Assisted Drafting Lab** **2**
This lab session aligns with ADT-151 and enhances the lecture session with practical Computer-Assisted Drafting (CAD) experiences. Students will practice their skills and techniques with the AutoCAD Program creating contract drawings to industry standards. (*Co-requisite:* ADT-151) (ART, TECH | TC)

**ADT-153** **Residential Planning** **2**
This course will provide hands-on Computer-Assisted Drafting (CAD) to create Residential Floor Plans, Residential Elevations, Site Layouts, Structural Framing Plans, Plumbing Plans and Electrical drawings. It will explain in detail what is required on a Residential Set of drawings for permitting purposes and will introduce students to basic Sustainability concepts and procedures. (*Prerequisites:* ADT-151, ADT-152; *Co-requisite:* ADT-154)

**ADT-154** **Residential Planning Lab** **2**
This lab session aligns with ADT-153 and enhances the lecture session with practical Computer-Assisted Drafting (CAD) experiences. Students will practice their skills and techniques with the AutoCAD Program creating contract drawings to industry standards. (*Prerequisites:* ADT-151, ADT-152; *Co-requisite:* ADT-153)

**ADT-155** **Project Estimating** **3**
This course will train students to use construction documents and drawings to calculate areas, volumes and material quantities in order to estimate material and labor costs. It will introduce students to gathering information from various types of drawings such as Site Plans, Floor Plans, Structural Plans and building systems plans and online resources. Students will use that information to estimate construction costs for projects. (*Prerequisite:* ART-110)

**ADT-240** **Technical Sketching** **3**
This course will teach students hand sketching skills in a wide range of topics, from basic 2-dimensional sketching fundamentals to more advanced 3-dimensional isometric representations. Students will learn the processes and procedures used in the development of technical sketches that are commonly used in the industry. Students will use these skills to create projects that are directly applicable to real world projects.

**ADT-251** **Building Information Modeling, Residential** **2**
This course expands computer skills to include Building Information Modeling (BIM) for residential construction. This course includes basic residential building modeling and presentation of the projects in multi-views. It contains sustainability concepts such as site orientation studies for sustainability design. (*Co-requisite:* ADT-252)

**ADT-252** **Building Information Modeling, Residential Lab** **2**
This lab session aligns with ADT-251 and enhances the lecture session with practical Building Information Modeling (BIM) drafting experiences. Students will practice their skills and techniques with the Autodesk Revit Program creating contract drawings to industry standards. (*Co-requisite:* ADT-251)

**ADT-253 Codes and Ordinances 3**

This course introduces students to the many regulatory agencies that govern the drafting and design field. It emphasizes the preparation of permit information for residential projects along with commercial building regulations for the protection of public health, safety and welfare. This course explains in further detail what it means to be sustainable and what practices can be used in "Green Building" Technology.

**ADT-255 Specifications 3**

This course explores building project materials and product specifications from the CSI format and how these materials and products relate to the drafting and design process. Students will research and write basic specifications for construction materials, outlining the scope of work, the materials to be used, the construction methods, and the quality control standards for each material.

**ADT-257 Building Information Modeling, Commercial 2**

This course expands BIM skills to include Commercial Building Projects and the use of features such as structural steel, multi-levels, curtain walls and store fronts. Students will expand the use of Building Information Modeling by using more advanced program features to implement commercial design into the projects. (*Co-requisite:* ADT-258)

**ADT-258 Building Information Modeling, Commercial Lab 2**

This lab session aligns with ADT-257 and enhances the lecture session with practical Building Information Modeling (BIM) drafting experiences. Students will practice their skills and techniques with the Autodesk Revit Program creating contract drawings to industry standards. (*Co-requisite:* ADT-257)

**ADT-263 Architectural History 3**

This course will introduce students to the vast history of architecture and the effect it has had on the world and humanity. Students will be introduced to Classic Architecture, Housing Styles, Building Uses, Materials and Methods of construction. Students will also meet Famous Architects and discover what an architect does. Students will study some of the psychology of architecture and its effect on people and places in the world. (HUM │ VED)

**AMT-113 Subtractive Manufacturing Lathe 1**

Safety, cutting speeds, types of lathes, lathe accessories, lathe operation, and measuring instruments are covered in this course. Lathe operations covered include facing, turning, center drilling, reaming, boring, tapering, knurling, and thread chasing. (*Prerequisites:* AMT-151, AMT-152; *Co-requisite:* AMT-114)

**AMT-114 Subtractive Manufacturing Lathe Lab 2**

Safety, cutting speeds, types of lathes, lathe accessories, lathe operation, and measuring instruments are covered in this course. Lathe operations covered include facing, turning, center drilling, reaming, boring, tapering, knurling, and thread chasing. (*Prerequisites:* AMT-151, AMT-152; *Co-requisite:* AMT-114)

**AMT-115 Subtractive Manufacturing Milling 1**

Information about safety, types of milling machines, milling machine attachments, and milling operations are covered in this course. Milling operations include squaring a piece, locating holes, drilling operations, and milling slots. Technical competence in the use of measuring instruments is also stressed. (*Prerequisites:* AMT-151, AMT-152; *Co-requisite:* AMT-116)

**AMT-116 Subtractive Manufacturing Milling Lab 2**
Information about safety, types of milling machines, milling machine attachments, and milling operations are covered in this course. Milling operations include squaring a piece, locating holes, drilling operations, and milling slots. Technical competence in the use of measuring instruments is also stressed. (*Prerequisites:* AMT-151, AMT-152; *Co-requisite:* AMT-115)

**AMT-151 Fundamentals of Metal Cutting 2**
This course covers machine trades theory including safety practices and working concepts of hand tools, bandsaws, belt sanders, pedestal grinders, drill presses, and cutting tools. It explains various material modification applications including hand tools, cutting, deburring, sharpening, grinding, and various cutting tools. Measuring instruments are also stressed throughout this course. (*Co-requisite:* AMT-152)

**AMT-152 Fundamentals of Metal Cutting Lab 1**
This course covers machine trades theory including safety practices and working concepts of hand tools, bandsaws, belt sanders, pedestal grinders, drill presses, and cutting tools. It provides practical applications from the lecture via projects. (*Co-requisite:* AMT-151)

**AMT-153 Subtractive Manufacturing 1**
Safety, cutting speeds, types of lathes, lathe accessories, lathe operation, and measuring instruments are covered in this course. Information about safety, types of milling machines, milling machine attachments, and milling operations are covered in this course. Technical competence in the use of measuring instruments is also stressed. (*Prerequisites:* AMT-151, AMT-152; *Co-requisite:* AMT-154)

**AMT-154 Subtractive Manufacturing Lab 2**
This covers the practical portion of the subtractive manufacturing course. Lathe operations covered include facing, turning, center drilling, reaming, boring, tapering, knurling, and thread chasing. Milling operations include squaring a piece, locating holes, drilling operations, and milling slots. (*Prerequisites:* AMT-151, AMT-152*; Co-requisite:* AMT-153)

**AMT-215 Computer Numerical Control Machining- Lathe 1**
This course covers the general information, such as G codes and M codes needed to program CNC lathes. CNC lathe safety procedures, tooling set-up, programming, and operation theory are covered in the course. Tool offsets are also covered in this course. (*Prerequisites:* AMT-113, AMT-114; *Co-requisite:* AMT-216)

**AMT 216 Computer Numerical Control Machining- Lathe Lab 2**
This course covers the general information, such as G codes and M codes needed to program CNC lathes. CNC lathe and safety procedures, tooling set-up, programming, and operation theory are covered in the course. Touching off tools, entering programs and running programs are practiced in this course. Tool offsets are also covered in this course. (*Prerequisites:* AMT-113, AMT-114; *Co-requisite:* AMT-215)

**AMT-217 Computer Numerical Control Machining- Milling 1**
This course covers the general information, such as G codes and M codes needed to program CNC Milling machines. CNC Milling machine safety procedures, tooling set-up, programming, and operation theory are covered in the course. Tool offsets are also covered in this course. (*Prerequisites:* AMT-115, AMT-116; *Co-requisite:* AMT-218)

**AMT-218 Computer Numerical Control Machining- Milling Lab 2**
This course covers the general information, such as G codes and M codes needed to program CNC Milling machines. CNC Milling machine safety procedures, tooling set-up, programming, and operation theory are covered in the course. Touching off tools, entering

programs and running programs are practiced in this course. Tool offsets are also covered in this course. (*Prerequisites:* AMT-115, AMT-116; *Co-requisite:* AMT-217)

**AMT-257 Computer Aided Design/Computer Aided Manufacturing 2**
This course introduces the students to the use of Computer Aided Design (CAD) software to create 2D geometry. Once the 2D geometry is complete tool paths are created to machine parts, editing tool paths, and downloading appropriate information to CNC and machine. (*Prerequisites:* AMT-215, AMT-216, AMT-217, AMT-218; *Co-requisite:* AMT-258)

**AMT-258 Computer Aided Design / Manufacturing Lab 1**
This course instructs the student in the application of CAD/CAM with CNC equipment. Students learn to create part models using SolidWorks and then write machining code using Mastercam. CNC machines are set up by the students to create the parts. Once parts are completed, students are instructed on inspection and quality control of the parts. (*Prerequisites:* AMT-215, AMT-216, AMT-217, AMT-218; *Co-requisite*: AMT-257)

**AMT-265 Manufacturing Management 1**
This course covers machine schedule, estimating, print control, revisions, tooling and material needs, and final production analysis. This course places the student as the owner of her/his shop to choose a part, estimate machine times, create or check blueprints. (*Prerequisites:* AMT-215, AMT-216, AMT-217, AMT-218; *Co-requisite:* AMT-266)

**AMT-266 Manufacturing Management Lab 3**
This course allows students to take on the role of a shop owner. They will select one or multiple parts, machine them using either manual or CNC machines, inspect the components, and assemble the parts if necessary. Upon completion, students will inspect their final product and evaluate the project to determine whether it resulted in a profit or loss. (*Prerequisites:* AMT-215, AMT-216, AMT-217, AMT-218; *Co-requisite:* AMT-265)

**ART-101 Blueprint Reading for Welders 2**
This course provides detailed information to help the students gain the skills that are required to read prints that are most common in the welding industry. Basic lines and views, dimensions, bill of materials and structural shapes are emphasized in this course. Accuracy of measurements and attention to detail will be stressed in the course. (ART)

**ART-103 Introduction to Print Reading and Shop Drawings 1**
This course is designed to introduce the students to the basics of print reading and interpretation. The areas of focus include the line types, symbols, views, title blocks, that are encountered when dealing with cabinetmaking and industrial prints. Sketching, materials, and finishes are also discussed. The course is intended to give the students an understanding of industrial prints and how their information is conveyed in both diagrammatic and sentential forms. (ART)

**ART-105 Blueprint / Schematic Reading 3**
This course conveys to the students an understanding of the procedures for reading and interpreting industrial prints. The course includes related peripheral information that will enhance the students' understanding of the diversity that is characteristic of industrial prints. Many types of industrial prints and their applications will be covered during this course. (ART)

**ART-110 Contract Drawings 3**
This course will introduce students to reading and understanding Contract Drawings for residential and commercial construction. This course will cover the composition of different industry drawings such as Residential House Plans, Commercial Architectural Plans, Civil Plans, Structural Plans, Plumbing Plans, HVAC Plans and Electrical drawings. Students will

be instructed on what type of information these drawings contain and what purpose these drawings serve. (ART)

**ART-115 Web Programming, Client Side Scripting 2**

The focus of this course includes but is not limited to the knowledge and techniques necessary to author industry standard web pages using HTML, XML, CSS, and Java script. Students will discover problems and develop solutions for a typical company web page, as well as the web page's installation, and will learn how to properly support both Windows Internet Information Server and Linux Apache Web Server platforms. Students will also learn about basic principles and methods used to work with databases. (*Co-requisite:* ART-116) (ART, TECH │CAR, TC)

**ART-116 Web Programming, Client Side Scripting Lab 1**

The focus of this lab includes but is not limited to the knowledge and techniques necessary to author industry standard web pages using HTML, XML, CSS, and Java script. Students will utilize web-programming languages to design and develop projects that can be debugged/executed in Internet browsers and via private server setups. Students will also utilize debugging tools to solve problems and implement solutions for a typical company web page, as well as the web pages installation and support on both Windows Internet Information Server and Linux Apache Web Server platforms. Students will also utilize basic techniques used to debug database issues. (*Co-requisite:* ART-115) (ART, TECH │CAR, TC)

**ART-125 Art in Industry 2**

This course introduces students of various divisions of study to 3D printing in an Art & Design setting. The students will be exposed to how the various industries represented at the college use 3D printing. Lecture topics will include adapting designs for the 3D printing process, creation of an iterative design, designing with texture, modification of primitive polyhedral shapes, and learning rules of 3D design. Students will be exposed to a variety of techniques, processes, materials, and technology commonly used in 3D printing. The students will create and print using a variety of 3D printers and learn post-processing techniques for how to achieve a desired finish on their projects. (*Co-requisite:* ART-126) (ART, TECH │CAR, SQR, TC)

**ART-126 Art in Industry Lab 1**

This course is designed to accompany ART 125 Art in Industry. Students will create and print using a variety of 3D printers and learn post-processing techniques for how to achieve a desired finish on their projects. (*Co-requisite:* ART-125) (ART, TECH │CAR, SQR, TC)

**ART-127 Computer Aided Design 3**

This course covers various aspects of computer-aided design may include but not limited to: how to read and produce engineer drawings, 2D sketches, extrusion (straight, tapered, revolved, and loft), creating patterns, threads, fillets and chamfers, high-resolution renderings, and simulation studies. (ART, TECH │TC)

**ART-129 Introduction to Woodcraft and Design 2**

The course involves theoretical and practical knowledge in the design and fabrication of wooden products. Topics will include the fundamentals of functional design, basic woodworking skills, and safe use of hand and power tools. This course will explore different wood materials and assembly methods while focusing on conservation of natural resources. (*Co-requisite:* ART-130) (ART │VED)

**ART-130 Introduction to Woodcraft and Design Lab 1**

This lab course complements the lecture portion of ART-129 Introduction to Woodcraft and Design and will focus on the hands-on practice of design, basic woodworking skills, and safe use of hand and power tools. (*Co-requisite:* ART-129) (ART │VED)

**ART-131** **Prosthetics Design** **3**

This course covers the use of digital technology to design and fabricate prosthetics, splints, and supports. Topics of biomimicry, kinematics, computer-aided design, materials, and fabrication will be addressed. Students will design and create functioning prosthetics and splints in the class. (ART, TECH │TC, VED)

**AUT-151** **Introduction to Vehicle Maintenance & Repair Technology** **2**

This course covers information on hand tools, machines, and equipment common to the vehicle maintenance field, general service procedures, lubricants, reference manuals, pre-delivery inspection of new and used vehicles and preventive maintenance procedures. The course is designed to equip students with the skills to work effectively with these topics while also promoting safe and thorough work habits.

**AUT-153** **Brake Systems** **1**

This course covers information on hydraulic brake systems. Mechanical foundation, service brake system principles, major components, parking brake systems, brake system diagnostics, service to drum brake assemblies, hydraulic lines and hoses, brake switches, anti-lock brake principles and service are all a part of this course. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. This will prepare students to take the ASE technician certification test. (*Co-requisite:* AUT-154)

**AUT-154** **Brake Systems Lab** **2**

This lab covers service practice procedures on hydraulic brake systems. Activities include, but are not limited to, understanding mechanical foundations, service brake system principles, diagnosing and repairing major components, working with parking brake systems, conducting brake system diagnostics, servicing drum brake assemblies, inspecting hydraulic lines and hoses, working with brake switches, and learning the principles and maintenance of anti-lock brake systems. High priority tasks recommended by ASE (Automotive Service Excellence) are practiced and performed to industry standards. This lab will prepare students to take the ASE technician certification test in brake systems. (*Co-requisite:* AUT-153)

**AUT-155** **Steering and Suspension Systems** **1**

This course covers information on steering and suspension systems, theory and principles, independent suspensions, geometric principles, factors affecting wheel alignment, tools and equipment used for steering and suspension, troubleshooting of suspension and steering, wheel bearings service, and manual steering and power steering system operation. This lecture on theory will prepare students to take the ASE technician certification test for steering and suspension systems.
(*Co-requisite:* AUT-156)

**AUT-156** **Steering and Suspension Systems Lab** **2**

This lab covers service practice procedures on steering and suspension systems. Students will utilize the theory learned in AUT-155 to diagnose steering and suspension issues and the effect on wheel alignment. Students will perform competency tasks with the tools and equipment used for steering and suspension adjustment and repair, troubleshooting of suspension and steering, wheel bearings service, and manual steering and power steering systems. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. This will prepare students to take the ASE technician certification test for steering & suspension systems. (*Co-requisite:* AUT-155)

**AUT-157** **Introduction to Welding for Auto Students** **2**

This course is designed to introduce students to the basic principles and practices of several different types of welding. Students will learn the principles and safety issues related to Gas welding and cutting, MIG welding, Stick welding, Flux Core welding and TIG welding.

Students will have the opportunity to practice the techniques used with all types of welding. This course will prepare students to perform welding tasks and minor fabrication tasks when they are in the industry setting.

**AUT-159 Electrical & Electronic Systems 1**
This course covers information on electricity, basic electrical circuits, tools and equipment, batteries, charging systems, starting systems, lighting systems, horn, wipers and washers, cooling fans, instrument circuits, and body electrical systems. This will prepare students to take the ASE technician certification test for electrical systems. (*Co-requisite:* AUT-160; Formerly VMR-159)

**AUT-160 Electrical & Electronic Systems Lab 2**
This lab covers competency tasks on basic electrical circuits, practical use of tools and equipment used to diagnose batteries, charging systems, starting systems, lighting systems, horn, wipers and washers, cooling fans, instrument circuits, and body electrical systems. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. This will prepare students to take the ASE technician certification test for electrical systems. (*Co-requisite:* AUT-159; Formerly VMR-160)

**AUT-161 Engine Performance & Emissions 1**
This course covers information theory on the operation and approved servicing of emission systems, fuel injection systems, computerized emission control systems, and computerized engine procedures. Computer diagnostics is introduced, including closed-loop theory and closed-loop diagnostics; basic troubleshooting and scan tool operation are also covered. Proper safety procedures related to fuel and emission systems are also covered. This will prepare students to take the ASE technician certification test for engine performance. (*Co-requisite:* AUT-162)

**AUT-162 Engine Performance & Emissions Lab 2**
This lab provides practical experience on the operation and approved servicing of emission systems, fuel injection systems, computerized emission control systems, and computerized engine procedures and utilizes live vehicles to reinforce the information presented. Students will perform competency tasks utilizing diagnostic equipment and proper safety procedures related to fuel and emission systems diagnostics and repair. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. This will prepare students to take the ASE technician certification test for engine performance. (*Co-requisite:* AUT-161)

**AUT-163 Internal Combustion Engine Fundamentals 1**
This course covers the theory on the operation and approved servicing of engine cooling systems and lubrication systems. The four- and two-stroke engine configurations are addressed along with various camshaft configurations. Proper safety procedures related to the diagnosis and repair of the internal combustion engine are also covered. This will prepare students to take the ASE technician certification test for engine diagnostics and overhaul. (*Co-requisite:* AUT-164)

**AUT-164 Internal Combustion Engine Fundamentals Lab 2**
This lab consists of practical experience on the operation and approved servicing of engine cooling systems and lubrication systems. Proper safety procedures related to the diagnosis and repair of the internal combustion engine are covered. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. This will prepare students to take the ASE technician certification test for engine diagnostics and overhaul. (*Co-requisite:* AUT-163)

**AUT-253 Certifications for Automotive Students 2**
This course is designed to provide necessary training and practical testing to assist students

in obtaining certifications for PA Safety Inspector, PA Emissions Inspector, and ASE Entry Level certification possibilities in all 8 categories of ASE training. These certifications will provide students with credentials that employers in the transportation industry are seeking.

**AUT-261 Gasoline Engine Overhaul Procedures 1**
Information and theory is provided for engine overhaul procedures. Emphasis is placed on the repair of cylinder heads, valve trains, and engine blocks. Proper safety procedures related to engine overhaul are covered. Proper diagnostics will be stressed as well as component inspection, measuring and testing. This will prepare students to take the ASE technician certification test for engine diagnostics and overhaul.
(*Prerequisite:* AUT-163, AUT-164; *Co-requisite:* AUT-262)

**AUT-262 Gasoline Engine Overhaul Procedures Lab 2**
This lab contains competency tasks for engine overhaul procedures. Emphasis is placed on properly diagnosing, inspecting and measuring components of cylinder heads, valve trains, and engine blocks. Proper safety procedures related to engine overhaul will also be practiced while performing live work. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. This will prepare students to take the ASE technician certification test for engine diagnostics and overhaul. (*Prerequisite:* AUT-163, AUT-164; *Co-requisite:* AUT-261)

**AUT-263 Advanced Automotive Electrical Technology 1**
This course will further reinforce theories and principles of automotive electronics through the use of diagnostic equipment for practical troubleshooting scenarios. Students will learn advanced techniques of wiring diagram reading. Students will be able to follow electrical flow through a circuit on a vehicle wiring diagram. Proper safety procedures related to electrical troubleshooting will also be discussed. (*Prerequisite:* AUT-159, AUT-160; *Co-requisite:* AUT-264)

**AUT-264 Advanced Automotive Electrical Technology Lab 2**
This lab will consist of problem scenarios created by the instructor. Students will perform specific tasks using the diagnostic equipment covered in the lecture portion of this course. Shop experiments will be performed to trace and repair electrical issues with the use of wiring diagrams. Students will use their ability to follow electrical flow through a circuit on a vehicle wiring diagram to diagnose and repair wiring defects. Proper safety procedures related to electrical troubleshooting will also be practiced. High priority tasks recommended by ASE (Automotive Service Excellence) are completed as competency exercises. This will prepare students to take the ASE technician certification test for electrical and electronics. (*Prerequisite:* AUT-159, AUT-160; *Co-requisite:* AUT-263)

**AUT-265 Automatic Transmissions and Transaxles 1**
This course covers the information and theory necessary to service automatic transmissions. Systematic troubleshooting procedures, adjustments and unit overhaul are discussed in this course. Students will learn how to find information on repairing and troubleshooting the modern electronically controlled automatic transmissions. This will prepare students to take the ASE technician certification test for automatic transmissions. (*Co-requisite:* AUT-266)

**AUT-266 Automatic Transmissions and Transaxles Lab 2**
This lab contains practical competency tasks that students will perform to hone their skills diagnosing and servicing automatic transmissions. Systematic troubleshooting procedures, adjustments, and unit disassembly and assembly are part of this program. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. This will prepare students to take the ASE technician certification test for automatic transmissions. (*Co-requisite:* AUT-265)

**AUT-267 Manual Transmissions and Differentials 1**

This course covers the theory and service procedure on complete power-train systems for front-, rear-, and four-wheel drive vehicles. Students will be taught the theory and mechanics of manual transmissions, drive axles and final drives. The students will utilize the theory of operation to help with diagnosing defective drive line components. Proper safety procedures related to manual transmissions and differentials will be discussed. This will prepare students to take the ASE technician certification test for manual transmissions and drive axles. (*Co-requisite:* AUT-268)

**AUT-268 Manual Transmissions and Differentials Lab 2**

This lab includes disassembly and assembly of components of complete power-train systems for front-, rear-, and four-wheel drive vehicles. New learning experiences include inspection, replacement, servicing, and rebuilding procedures and proper diagnostics of manual transmissions, transaxles, and locking hubs. In addition, servicing, troubleshooting and overhaul procedures for 4-wheel drive differentials and drive shafts will be practiced. Proper safety procedures related to manual transmissions and differentials will also be used when performing tasks and live work. High priority competency tasks recommended by ASE (Automotive Service Excellence) are performed and assessed. This will prepare students to take the ASE technician certification test for manual transmissions and drive axles. (*Co-requisite:* AUT-267)

**AUT-269 Applied Automotive Principles and Applications 2**

This course is intended to re-examine and emphasize specific mechanical knowledge and diagnostic experience and to apply that to principles and theories learned in previous courses. Students are expected to hone the specific skills to prepare them for entry-level positions upon graduation. This will prepare students to take the ASE technician certification test. (*Co-requisite:* AUT-270)

**AUT-270 Applied Automotive Principles and Applications Lab 2**

This lab is intended to re-examine and emphasize specific mechanical skills and diagnostic techniques and to apply them to principles and theories learned in previous courses. Students are expected to hone the specific skills by performing competency tasks to industry standards. Doing this will prepare students for entry-level positions upon graduation. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. This will prepare students to take the ASE technician certification test. (*Co-requisite:* AUT-269)

**AVT-101 Fundamentals of Electricity and Electronics 3**

Basic electricity theory is covered in this course including static and current electricity, basic electrical units, terminology and magnetism. Circuit components are discussed and complex DC circuits are analyzed using Ohm's Law and power formulas. Different methods of generating electrical energy are covered and laboratory projects include fabrication and testing of circuits containing a variety of components. A unit on the theory, testing and maintenance of batteries rounds out the DC phase of this course. Primary and secondary batteries including lead-acid and nickel-cadmium types are included. The AC phase of the course involves mathematically analyzing inductive and capacitive circuits including power formulas. Solid-state devices are introduced and theory discussed. A final unit on testing and troubleshooting is covered in this course. The General Curriculum subject included in this course and required by FAA-S-ACS-1 is General Subject A. Fundamentals of Electricity and Electronics; Sections AM.I.A.K1 through AM.I.A.K27. (*Co-requisite*: AVT-102) (SCI, TECH │CAR, SQR, TC)

**AVT-102 Electronics Lab 2**

This laboratory course incorporates the skills needed to apply information presented in AVT-101. Basic electricity theory is covered in this course including static and current electricity, basic electrical units, terminology and magnetism. Circuit components are discussed and complex DC circuits are analyzed using Ohm's Law and power formulas.

Different methods of generating electrical energy are covered and laboratory projects include fabrication and testing of circuits containing a variety of components. A unit on the theory, testing and maintenance of batteries rounds out the DC phase of this course. Primary and secondary batteries including lead-acid and nickel-cadmium types are included. The AC phase of the course involves mathematically analyzing inductive and capacitive circuits including power formulas. Solid-state devices are introduced and theory discussed. A final unit on testing and troubleshooting is covered in this course. The General Curriculum subject included in this course and required by FAA-S-ACS-1 is General Subject A. Fundamentals of Electricity and Electronics; Sections AM.I.A.R1 through AM.I.A.R4, and AM.I.A.S1 through AM.I.A.S14. (*Co-requisite*: AVT-101) (SCI, TECH │CAR, SQR, TC)

**AVT-104 Aircraft Weight and Balance Lab 1**

This laboratory course introduces the student to the fundamental principles of aircraft weight and balance. Topics include terminology, procedures, calculations and record keeping for preparing the weight and balance of an aircraft. The General Curriculum subjects included in this course and required by FAA-S-ACS-1 is General Subject B-Aircraft Drawings & C-Weight and Balance; Sections AM.I.B.K1 through AM.I.B.K4, AM.I.B.R1 through AM.I.B.R4, AM.I.B.S1 through AM.I.B.S6, AM.I.C.K1 through AM.I.C.K10, AM.I.C.R1 through AM.I.C.R5, and AM.I.C.S1 through AM.I.C.S17.

**AVT-105 Aircraft Materials, Hardware & Processes 1**

This course introduces the student to the materials used in aircraft and how to identify them, including types of fasteners typically used. Additionally, the processes that keep all equipment in usable condition will be explored. The General Curriculum subjects included in this course and required by FAA-S-ACS-1 are General Subjects D-Fluid Lines and Fittings, E-Aircraft Materials, Hardware & Processes, and G-Cleaning and Corrosion Control; Sections AM.I.D.K1 through AM.I.D.K6, AM.I.E.K1 through AM.I.E.K14, and AM.I.G.K1 through AM.I.G.K24. (*Co-requisite*: AVT-106)

**AVT-106 Aircraft Materials Lab 2**

This laboratory course incorporates the skills needed to apply information presented in AVT-105 and introduces the student to the materials used in aircraft and how to identify them, including types of fasteners typically used. Additionally, the processes that keep all equipment in usable condition will be explored. The General Curriculum subjects included in this course and required by FAA-S-ACS-1 are General Subjects D-Fluid Lines and Fittings, E-Aircraft Materials, Hardware & Processes, and G-Cleaning and Corrosion Control; Sections AM.I.D.R1 through AM.I.D.R7, AM.I.D.S1 through AM.I.D.S8, AM.I.E.R1 through AM.I.E.R4, AM.I.E.S1 through AM.I.E.S14, AM.I.G.R1 through AM.I.G.R8, and AM.I.G.S1 through AM.I.G.S14 (*Co-requisite*: AVT-105)

**AVT-107 Regulations, Inspection Techniques & Forms 2**

Ground operation and servicing topics covered include shop and flight line safety (fire safety and procedures, jacking safety, hazardous materials procedures, e-down techniques, standard hand signals, and fueling safety and procedures, etc.). Servicing with ground power units, oxygen and other related items used on aircraft are discussed. This course covers a review of regulations, maintenance forms, records and publications along with inspection concepts and techniques and finally human factors. The General Curriculum subjects included in this course and required by FAA-SACS-1 are General Subject F-Ground Operations and Servicing, I-Regulations, Maintenance forms, Records, and Publications, K-Inspection Concepts and Techniques, and L-Human Factors; Sections AM.I.F.K1 through AM.I.F.K16, AM.I.I.K1 through AM.I.I.K13, AM.I.K1 through AM.I.K23, and AM.I.K1 through AM.I.K5. (*Co-requisite*: AVT-108)

**AVT-108 Aircraft Regulations Lab 2**

This laboratory course incorporates the skills needed to apply information presented in AVT-107 with a focus on ground operation and servicing topics covered include shop and

flight line safety (fire safety and procedures, jacking safety, hazardous materials procedures, e-down techniques, standard hand signals, and fueling safety and procedures, etc.). Servicing with ground power units, oxygen and other related items used on aircraft are performed, along with towing, taxiing aircraft, and engine starting procedures. The General Curriculum subjects included in this course and required by FAA-SACS-1 are General Subject F-Ground Operations and Servicing, I-Regulations, Maintenance forms, Records, and Publications, K-Inspection Concepts and Techniques, and L-Human Factors; Sections AM.I.F.R1 through AM.I.F.R10, AM.I.F.S1 through AM.I.F.S12, AM.I.I.R1 through AM.I.I.R5, AM.I.I.S1 through AM.I.I.S18, AM.I.K.R1 through AM.I.K.R5, AM.I.K.S1 through AM.I.K.S18, AM.I.L.R1 through AM.I.L.R3, and AM.I.L.S1 through AM.I.L.S3. (*Co-requisite*: AVT-107)

**AVT-110 Aircraft Physics and Math Lab 1**

This laboratory course instructs students on the math and physics problems encountered by aviation mechanics. Students will perform mathematical calculations through the use of correct methods, procedures, and practice. The General Curriculum subjects included in this course and required by FAA-S-ACS-1 are General Subject H-Mathematics, J-Physics for Aviation; Sections AM.I.H.K1 through AM.I.H.K13, AM.I.H.R1 through AM.I.H.R3, AM.I.H.S1 through AM.I.H.S8, AM.I.J.K1 through AM.I.J.K13, AM.I.J.R1 through AM.I.J.R4, and AM.I.J.S1 through AM.I.J.S8.

**AVT-211 Aircraft Metallic Structures 2**

This course introduces students to the various materials and processes used in aircraft fabrication and repair including the uses, strengths, limitations, and other characteristics of structural metals. The Airframe Curriculum subject included in this course and required by FAA-S-ACS-1 is Airframe Subject A-Metallic Structures; Sections AM.II.A.K1 through AM.II.A.K17. (*Co-requisite*: AVT-212)

**AVT-212 Aircraft Metallic Structures Lab 2**

This laboratory course incorporates the skills needed to apply information presented in AVT-211 and provides instruction in basic sheet metal skills including forming, welding, riveting and material selection. The Airframe Curriculum subject included in this course and required by FAA-S-ACS-1 is Airframe Subject A-Metallic Structures; Sections AM.II.A.R1 through AM.II.A.R5, and AM.II.A.S1 through AM.II.A.S14. (*Co-requisite*: AVT-211)

**AVT-213 Aircraft Non-Metallic Structures 1**

This course introduces students to the various materials and processes used in aircraft fabrication and repair including the uses, strengths, limitations, and other characteristics of wood, fiberglass, composite, thermoplastic and fabrics. The Airframe Curriculum subject included in this course and required by FAA-S-ACS-1 is Airframe Subject B-Non-Metallic Structures; Sections AM.II.B.K1 through AM.II.B.K29. (*Co-requisite*: AVT-214)

**AVT-214 Aircraft Non-Metallic Structures Lab 1**

This laboratory course incorporates the skills needed to apply information presented in AVT-213. Students work with the various materials and processes used in aircraft fabrication and repair including the uses, strengths, limitations, and other characteristics of wood, fiberglass, composite, thermoplastic and fabrics. The Airframe Curriculum subject included in this course and required by FAA-S-ACS-1 is Airframe Subject B-Non-Metallic Structures. AVT-213 will cover sections AM.II.B.K1 through AM.II.B.K29. AVT-214 will cover sections AM.II.B.R1 through AM.II.A.R7, and AM.II.A.S1 through AM.II.A.S12. (*Co-requisite*: AVT-213)

**AVT-215 Aircraft Controls, Airframe Inspection and Systems 1**

This course focuses on the required inspections of aircraft component systems, including cables, tubes and components associated with aircraft control. The required knowledge of rotorcraft including flight controls, ground handling and rigging is also included. The Airframe Curriculum subjects included in this course and required by FAA-S-ACS-1 are Airframe Subject C-Flight Controls, D-Airframe Inspection, E-Landing Gear Systems, F-Hydraulic and Pneumatic Systems and N-Rotorcraft Fundamentals; Sections AM.II.C.K1 through AM.II.C.K13, AM.II.D.K1 through AM.II.D.K9, AM.II.E.K1 through AM.II.E.K13, AM.II.F.K1 through AM.II.F.K11, and AM.II.N.K1 through AM.II.N.K9. (*Co-requisite*: AVT-216)

**AVT-216 Aircraft Controls, Airframe Inspection and Systems Lab 2**

This laboratory course incorporates the skills needed to apply information presented in AVT-215 and focuses on the required inspections of aircraft component systems, including cables, tubes and components associated with aircraft control. The required skills for rotorcraft including flight controls, ground handling and rigging are also included. The Airframe Curriculum subjects included in this course and required by FAA-S-ACS-1 are Airframe Subject C-Flight Controls, D-Airframe Inspection, E-Landing Gear Systems, F-Hydraulic and Pneumatic Systems and N-Rotorcraft Fundamentals; Sections AM.II.C.R1 through AM.II.C.R5, AM.II.C.S1 through AM.II.C.S12, AM.II.D.R1 through AM.II.D.R5, AM.II.D.S1 through AM.II.D.S7, AM.II.E.R1 through AM.II.E.R6, AM.II.E.S1 through AM.II.E.S29, AM.II.F.R1 through AM.II.F.R5, AM.II.F.S1 through AM.II.F.S16, AM.II.N.R1 through AM.II.N.R4, and AM.II.N.S1 through AM.II.N.S4. (*Co-requisite*: AVT-215)

**AVT-217 Airframe Environmental, Instrument Lighting and Water Systems 2**

This course focuses on the function, operation, and inspection of aircraft systems, including the maintenance and repair of pressurization, air conditioning, and cabin pressurization systems. The Airframe Curriculum subjects included in this course and required by FAA-S-ACS-1 are Airframe Subject G-Environmental Systems, H-Airframe Instrument systems, I-Communications and Navigation Systems, and O-Water and Waste Water Systems; Sections AM.II.G.K1 through AM.II.G.K9, AM.II.H.K1 through AM.II.G.K24, AM.II.I.K1 through AM.II.I.K21, and AM.II.O.K1 through AM.II.O.K3. (*Co-requisite*: AVT-218)

**AVT-218 Airframe Environmental, Instrument Lighting and Water Systems Lab 2**

This laboratory course incorporates the skills needed to apply information presented in AVT-217 and focuses on the function, operation and inspection of aircraft systems, including the maintenance and repair of pressurization, air conditioning, and cabin pressurization systems. The Airframe Curriculum subjects included in this course and required by FAA-S-ACS-1 are Airframe Subject G-Environmental Systems, H-Airframe Instrument systems, I-Communications and Navigation Systems, and O-Water and Waste Water Systems; Sections AM.II.G.R1 through AM.II.G.R6, AM.II.G.S1 through AM.II.G.S14, AM.II.H.R1 through AM.II.H.R5, AM.II.H.S1 through AM.II.H.S14, AM.II.I.R1 through AM.II.I.R6, AM.II.I.S1 through AM.II.I.S13, AM.II.O.R1, and AM.II.O.S1 through AM.II.O.S2. (*Co-requisite*: AVT-217)

**AVT-219 Airframe Fuel, Electrical, Ice & Fire Control Systems 2**

This course focuses on aircraft fuel, electrical, ice & rain control systems, and fire protection systems. The fuel section involves fuel types, system components, fuel flow, system maintenance and inspection. The electrical section details AC and DC power systems, basic wiring, troubleshooting and repair, while the fire section describes the types of fires, correct extinguishing agents, detection and warning systems, maintenance, and inspection. The Airframe Curriculum subjects included in this course and required by FAA-S-ACS-1 are Airframe Subject J-Aircraft Fuel Systems, K-Aircraft Electrical Systems, L-Ice and Rain Control Systems, and M-Airframe Fire Protection Systems; Sections AM.II.J.K1 through

AM.II.J.K9, AM.II.K.K1 through AM.II.K.K17, AM.II.L.K1 through AM.II.L.K7, and AM.II.M.K1 through AM.II.M.K7. (*Co-requisite*: AVT-220)

**AVT-220 Airframe Fuel, Electrical, Ice & Fire Control Systems Lab 3**

This laboratory course incorporates the skills needed to apply information presented in AVT-219 and focuses on fuel types, system components, fuel flow, system maintenance and inspection. The electrical section details AC and DC power systems, basic wiring, troubleshooting and repair, while the fire section describes the types of fires, correct extinguishing agents, detection and warning systems, maintenance, and inspection. The Airframe Curriculum subjects included in this course and required by FAA-S-ACS-1 are Airframe Subject J-Aircraft Fuel Systems, K-Aircraft Electrical Systems, L-Ice and Rain Control Systems, and M-Airframe Fire Protection Systems; Sections AM.II.J.R1 through AM.II.J.R5, AM.II.J.S1 through AM.II.J.S17, AM.II.K.R1 through AM.II.K.R9, AM.II.K.S1 through AM.II.K.S20, AM.II.L.R1 through AM.II.L.R3, AM.II.M.R1 through AM.II.M.R3, and AM.II.M.S1 through AM.II.M.S12. (*Co-requisite*: AVT-219)

**AVT-221 Aircraft Reciprocating Engines 3**

This course focuses on the operating principles and theory of reciprocating engine operation, performance, maintenance and inspection. The Powerplant Curriculum subject included in this course and required by FAA-S-ACS-1 is Powerplant Subject A-Reciprocating Engines; Sections AM.III.A.K1 through AM.III.A.K10. (*Co-requisite*: AVT-222)

**AVT-222 Aircraft Reciprocating Engines Lab 3**

This laboratory course incorporates the skills needed to apply information presented in AVT-221. Instruction focuses on applying the operating principles and theory of reciprocating engine operation, performance, maintenance and inspection. The Powerplant Curriculum subject included in this course and required by FAA-S-ACS-1 is Powerplant Subject A-Reciprocating Engines; Sections AM.III.A.R1 through AM.II.D.R4, and AM.III.A.S1 through AM.III.A.S9. (*Co-requisite*: AVT-221)

**AVT-223 Aircraft Turbine Engines 3**

This course focuses on the operating principles and theory of turbine engines. Topics include types of turbines, construction, performance, troubleshooting, maintenance and inspection, engine adjustment, and testing. The Powerplant Curriculum subject included in this course and required by FAA-S-ACS-1 is Powerplant Subject B-Turbine Engines; Sections AM.III.B.K1 through AM.III.B.K11. (*Co-requisite*: AVT-224)

**AVT-224 Airframe Turbine Engines Lab 3**

This laboratory course incorporates the skills needed to apply information presented in AVT-223. Instruction focuses on applying the operating principles and theory of turbine engines. Topics include types of turbines, construction, performance, troubleshooting, maintenance and inspection, engine adjustment, and testing. The Powerplant Curriculum subject included in this course and required by FAA-S-ACS-1 is Powerplant Subject B-Turbine Engines; Sections AM.III.B.R1 through AM.III.B.R4, and AM.III.B.S1 through AM.III.B.S13. (*Co-requisite*: AVT-223)

**AVT-225 Aircraft Engine, Fire Protection & Electrical Systems 2**

This course focuses on engine inspection, instrument systems, fire protection systems, and electrical systems. The engine portion of this class will focus on inspection requirements, special inspections, compliance with required documentation and approved data, along with engine instruments that monitor fuel flow, temperature, engine speed, and warnings, caution and advisory lights. Engine fire protection covers types of agents, types of fires and where they might occur, and maintenance and inspection of such systems. The final section of the class will discuss generators, alternators, AC and DC systems and procedures for correct wiring. The Powerplant Curriculum subjects included in this course and required by FAA-

S-ACS-1 are Powerplant Subject C-Engine Inspection, D-Engine Instrument Systems, E-Engine Fire Protection Systems, and F-Engine Electrical Systems; Sections AM.III.C.K1 through AM.III.C.K8, AM.III.D.K1 through AM.III.D.K11, AM.III.E.K1 through AM.III.E.K5, and AM.III.F.K1 through AM.III.F.K10. (*Co-requisite*: AVT-226)

**AVT-226 Aircraft Engine, Fire Protection & Electrical Systems Lab 3**

This laboratory course incorporates the skills needed to apply information presented in AVT-225 and focuses on applying the inspection, maintenance, and compliance requirements for fire protection of engine and electrical systems. The Powerplant Curriculum subjects included in this course and required by FAA-S-ACS-1 are Powerplant Subject C-Engine Inspection, D-Engine Instrument Systems, E-Engine Fire Protection Systems, and F-Engine Electrical Systems; Sections AM.III.C.R1 through AM.III.C.R3, AM.III.C.S1 through AM.III.C.S14, AM.III.D.R1 through AM.III.D.R2, AM.III.D.S1 through AM.III.D.S19, AM.III.E.R1 through AM.III.E.R3, AM.III.E.S1 through AM.III.E.S14, AM.III.F.R1 through AM.III.F.R4, and AM.III.F.S1 through AM.III.F.S15. (*Co-requisite*: AVT-225)

**AVT-227 Aircraft Lubrication, Ignition & Starting, Induction & Fuel Systems 2**

This course focuses on engine lubrication systems, ignition and starting systems, engine fuel and fuel metering systems, and engine induction and cooling systems. Items discussed will include types of oil, types of lubrication systems, spark plugs, shower of sparks, digital engine controls, rotary and turbine engine ignition systems, fuel lines, fuel pumps, fuel valves, fuel filters, fuel drains, and reciprocating engine induction and cooling system theory, components and operation. The Powerplant Curriculum subjects included in this course and required by FAA-S-ACS-1 are Powerplant Subject G-Engine Lubrication Systems, H-Ignition and Starting Systems, I-Engine Fuel and Fuel Metering Systems, J-Reciprocating Engine Induction and Cooling Systems; Sections AM.III.G.K1 through AM.III.G.K7, AM.III.H.K1 through AM.III.H.K9, AM.III.I.K1 through AM.III.I.K16, and AM.III.J.K1 through AM.III.J.K10. (*Co-requisite*: AVT-228)

**AVT-228 Aircraft Lubrication, Ignition & Starting, Induction & Fuel Systems Lab 3**

This laboratory course incorporates the skills needed to apply information presented in AVT-227, focusing on applying the components and operation requirements for fuel systems, ignition and starting systems, and induction and cooling systems. The Powerplant Curriculum subjects included in this course and required by FAA-S-ACS-1 are Powerplant Subject G-Engine Lubrication Systems, H-Ignition and Starting Systems, I-Engine Fuel and Fuel Metering Systems, J-Reciprocating Engine Induction and Cooling Systems; Sections AM.III.G.R1 through AM.III.G.R3, AM.III.G.S1 through AM.III.G.S14, AM.III.H.R1 through AM.III.H.R3, AM.III.H.S1 through AM.III.H.S17, AM.III.I.R1 through AM.II.I.R5, AM.III.I.S1 through AM.III.I.S30, AM.III.J.R1 through AM.III.J.R4, and AM.III.J.S1 through AM.III.J.S19. (*Co-requisite*: AVT-227)

**AVT-229 Aircraft Engine Air, Exhaust & Reverser Systems 2**

This course will focus on turbine engine air systems, engine exhaust and reverser systems. Included in turbine air systems are insulation blankets and shrouds, baffles and seals. Also discussed is bleed air system theory, components and operation. Exhaust and mufflers, hush kits and augmenter tubes are also included as part of air systems. The Powerplant Curriculum subjects included in this course and required by FAA-S-ACS-1 are Powerplant Subject K-Turbine Engine Air Systems, L-Engine Exhaust and Reverser Systems; Sections AM.III.K.K1 through AM.III.K.K4, and AM.III.L.K1 through AM.III.L.K4. (*Co-requisite*: AVT-230)

**AVT-230 Aircraft Engine Air, Exhaust & Reverser Systems Lab 2**

This laboratory course incorporates the skills needed to apply information presented in AVT-229 and focuses on applying the requirements of turbine engine air systems, including

exhaust and mufflers. The Powerplant Curriculum subjects included in this course and required by FAA-S-ACS-1 are Powerplant Subject K-Turbine Engine Air Systems, L-Engine Exhaust and Reverser Systems; Sections AM.III.K.R1 through AM.III.K.R2, AM.III.K.S1 through AM.III.K.S8, AM.III.L.R1 through AM.III.L.R5, and AM.III.L.S.1 through AM.III.L.S7. (*Co-requisite*: AVT-229)

**AVT-231 Aircraft Propellers 1**

This course will focus on the operating principles and theory of propellers including types of propellers, construction, performance, troubleshooting, maintenance and inspection, and installation. The Powerplant Curriculum subject included in this course and required by FAA-S-ACS-1 is Powerplant Subject M-Propellers; Sections AM.III.M.K1 through AM.III.M.K10. (*Co-requisite*: AVT-232)

**AVT-232 Aircraft Propellers Lab 1**

This laboratory course incorporates the skills needed to apply information presented in AVT-231. Instruction focuses on applying the operating principles and theory of propellers including types of propellers, construction, performance, troubleshooting, maintenance and inspection, and installation. The Powerplant Curriculum subject included in this course and required by FAA-S-ACS-1 is Powerplant Subject M-Propellers; Sections AM.III.M.R1 through AM.III.M.R2, and AM.III.M.S1 through AM.III.M.S12. (*Co-requisite*: AVT-231)

**BET-231 Medical Equipment Standards and Testing 2**

The student learns the requirements and methods of testing medical equipment for conformance with current standards of the biomedical industry, also known as Healthcare Technology Management (HTM). Students learn the hierarchy of statutes, regulations, standards including accreditation standards, and hospital policies for healthcare equipment management and safety. Students learn principles of electrical safety testing, HTM and medical ethics as they pertain to the Biomedical Technician. Equipment management principles that maximize life span and minimize life-cycle costs are stressed. Sustainable practices to minimize resource and chemical use are also emphasized. (*Prerequisites*: EET-165, EET-166; *Co-requisite*: BET-232)

**BET-232 Medical Equipment Standards and Testing Lab 2**

Students perform extensive equipment testing to verify conformance with national standards and manufacturer's specifications. Students learn standard practices for electrical safety testing, and conformance with industry standards, manufacturer's specifications as they pertain to the HTM field. Extensive testing of medical devices including centrifuges, IV pumps, and physical therapy devices is practiced with students proving their skills in performance tests. Equipment management software inventory and work order entry are practiced to prepare the student with entry-level HTM skills. (*Prerequisites*: EET-165, EET-166; *Co-requisite*: BET-231)

**BET-233 Physiological Monitoring Devices 2**

This course explains many hazards encountered in the hospital environment and the role of the BMET in controlling them. It continues by discussing the different types of transducers and electrodes used with biomedical equipment. The cardiovascular system is prominent as the student learns the principles of electrocardiography and blood pressure measurement. The course concludes by examining ECG and pressure monitors, as well as the principles of other bedside monitoring parameters, and the types of specialized test equipment used in HTM to test and verify accuracy of these medical devices. (*Prerequisites:* EET-165, EET-166; *Co-requisite*: BET-234)

**BET-234 Physiological Monitoring Devices Lab 2**

Specialized test equipment is used in hands-on training. Extensive testing of medical devices such as ECG, blood pressure, pulse oximetry and capnography is stressed with students proving their skills in performance tests. Equipment management software inventory and

work order entry are practiced to prepare the student with entry-level HTM skills. The course concludes by examining ECG and pressure monitors, concentrating on the test equipment used to test and verify accuracy. (*Prerequisites*: EET-165, EET-166; *Co-requisite*: BET-233)

**BET-235 Life Support Systems 2**

This course is an overview of the types of medical equipment needed to support patients who have life threatening problems. Examples of such equipment are defibrillators, pacemakers, ventilators, and hemodialysis units. The function of each type of equipment is discussed. Some pieces of equipment are examined thoroughly in relation to functional testing, preventive maintenance, parts identification, and description of circuits. A mock certification exam is the capstone of this course. *(Prerequisites*: EET-165, EET-166; *Co-requisite*: BET-236)

**BET-236 Life Support Systems Lab 2**

Extensive testing of medical devices including defibrillators, external pacers, ventilators, and electrosurgical units is practiced with students proving their skills in performance tests. Specialized test equipment is used in hands-on training. Equipment management software inventory and work order entry are practiced to prepare the student with entry-level HTM database skills. *(Prerequisites*: EET-165, EET-166; *Co-requisite*: BET-235)

**BET-237 Specialized Medical Systems 2**

This course describes the different types of specialized medical equipment found in the hospital environment. Lasers, x-ray, ultrasound imaging, and nuclear imaging equipment are examples of the modalities covered. The basic theory and function of each system is explained with emphasis on quality control, patient, and personal safety. *(Prerequisites*: EET-165, EET-166; *Co-requisite*: BET-238)

**BET-238 Specialized Medical Systems Lab 1**

Lab experiments include video system setup and testing, diagnostic ultrasound familiarization and quality control checks, x-ray system familiarization and quality control checks, and video display quality control checks. Equipment management software inventory and work order entry are practiced to prepare the student with entry-level HTM skills. Students prove acquired skills in hands-on performance tests. *(Prerequisites*: EET-165, EET-166; *Co-requisite*: BET-237)

**BET-299 Internship 4**

Students work for 200 hours in a healthcare facility or medical equipment repair facility after completing 50 credit hours, having a career GPA of 2.00, and meeting all other program prerequisites and academic requirements prior to their final spring term. The internship offers students applied healthcare technology management and service experience. In the internship, the student performs preventive maintenance, safety analysis, and minor repairs on selected pieces of medical equipment. Students are expected to adhere to all policies and regulations associated with their internship facility. The schedule for meeting the requirement of this experience will be arranged between the student, faculty member and internship site. (*200 hours*)

**BIO-105 Physiology and Anatomy 3**

The structure and functions of the human body as related to biomedical instrumentation are the subject matter covered in this course. Major body systems are discussed, followed by correlations to the physiological variables to be measured and the basic principles of instrumentation that could be used. (SCI | CAR, SQR)

**BIO-107 Human Anatomy and Physiology I 3**

This course is the first term of a medically-oriented study of the structure and function of the human body. It is designed for students specializing in health-related and science

programs. Topics include basic biochemistry; basic genetics; cells; tissues; and the integumentary, skeletal, muscular, endocrine and nervous systems. Successful completion of recent high school biology and chemistry courses is highly recommended. (*Co-requisite:* BIO-108) (SCI)

**BIO-108 Human Anatomy & Physiology I Lab 1**

This lab is designed to enhance and reinforce topics covered in BIO-107. Topics will include body organization, cell anatomy, histology and tissues organization, the integumentary system, the skeletal system, the muscular system, and the nervous system. In addition to the lab manual, this course will utilize McGraw Hill's Anatomy and Physiology Revealed (APR) which is a computerized system that enables students to explore the human anatomy and physiology through the use of a virtual dissection, histological review, and self-paced quizzing. (*Co-requisite:* BIO-107) (SCI, TECH │TC)

**BIO-109 Human Anatomy and Physiology II 3**

This course is the second term of a medically-oriented study of the structure and function of the human body. Topics include digestive, cardiovascular, respiratory, lymphatic, immune, urinary, reproductive systems and the inclusion of anatomical topography and transverse anatomy. (*Prerequisites:* BIO-107, BIO-108; *Co-requisite:* BIO-110) (SCI)

**BIO-110 Human Anatomy & Physiology II Lab 1**

This lab is designed to enhance and reinforce topics covered in BIO 109. Topics will include the blood and circulation, the cardiovascular system, the lymphatic system and immunity, the respiratory system, the urinary system, the reproductive system, the digestive system, and the endocrine system, as well as human development and genetics and metabolic function and nutrition. In addition to the lab manual, this course will utilize McGraw Hill's Anatomy and Physiology Revealed (APR) which is a computerized system that enables students to explore the human anatomy and physiology through the use of a virtual dissection, histological review, and self-paced quizzing. **(***Prerequisites*: BIO 107, BIO 108; *Co-requisite:* BIO-109) (SCI, TECH │TC)

**BPM-101 Basics of Property Maintenance 3**

This course will familiarize students with the basic skills needed to maintain commercial and residential properties. Students will learn basic skills in customer service, electricity, carpentry, plumbing, HVAC, concrete, and weatherization.

**BPM-151 Building Finishes and Repair 2**

Building Finishes and Repair is the study of common materials and procedures used for finishing the interior and exterior of a building. Students will gain skills in the safe use of equipment and materials common to the construction industry. (*Co-requisite:* BPM-152)

**BPM-152 Building Finishes and Repair Lab 4**

This course provides the opportunity for students to apply the theory and concepts of BPM-151. Students will practice procedures used for finishing the interior and exterior of a building. (*Co-requisite:* BPM-151)

**BTT-103 Introduction to Pipefitting 2**

This introductory pipefitting course provides students with a basic understanding of the materials, processes, and tools used in residential and light commercial applications. Students will learn safe work practices, as well as common components and fixtures that are installed in various settings.

**BTT-105 Introduction to Electricity for the Trades 1**

This course provides introductory information and practical experience in installation of basic electrical systems in residential applications. This course will demonstrate proper

usage of both electrical hand tools and power tools and discuss basic electrical theories and codes. (*Co-requisite:* BTT-106)

**BTT-106 Introduction to Electricity for the Trades Lab 2**
This course provides introductory information and practical experience in installation of basic electrical systems in residential applications. This course will demonstrate proper usage of both electrical hand tools and power tools and discuss basic electrical theories and codes. Lab times for this course will be scheduled both on and off campus. (*Co-requisite:* BTT-105)

**BTT-107 Fundamentals of Carpentry 1**
This course is the study and practice of the common materials and procedures used in residential construction and remodeling. The course provides practical lessons in basic wall framing, drywall application and finishing. Students will be exposed to the safe use of equipment and materials common to the construction industry. Students will be required to demonstrate knowledge of different materials, tools, and applications in the construction industry. (*Co-requisite*: BTT-108)

**BTT-108 Fundamentals of Carpentry Lab 2**
Fundamentals of Carpentry Lab provides students the opportunity to apply theory to practice in a lab or live-lab environment. Students will select common materials and use building procedures appropriate for residential construction. Students will practice the safe use and maintenance of construction tools and equipment. (*Co-requisite*: BTT-107)

**BTT-151 Fundamentals of Electricity 2**
This course covers general safety principles, basic construction guidelines, and laws governing electricity emphasizing theoretical concepts. Fundamentals such as Ohm's Law as it relates to DC and AC circuits will be covered in depth. Electrical components such as resistors, capacitors, and inductors will be examined. (*Co-requisite*: BTT-152) (SCI | CAR)

**BTT-152 Fundamentals of Electricity Lab 2**
This course covers general safety principles, basic construction guidelines and laws governing electricity, basic hand tool usage, print reading, electrical safety, circuit construction and operation. This course will also begin to outline use and interpretation of the National Electrical Code (NEC). (*Co-requisite*: BTT-151) (SCI | CAR)

**BTT-251 Motor and Controls 2**
This course covers the fundamental concepts of motors and motor controls. Students will discuss ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. This course also covers service and repair principles and practices for industrial electrical systems, industrial electronic devices, programmable controllers, welding, boilers, HVAC, mechanical and pneumatic and fluid power systems. Upon completion, students will be able to properly select, connect, and troubleshoot motors and control circuits. (*Prerequisites:* BTT-151, BTT-152; *Co-requisite:* BTT-252)

**BTT-252 Motor and Controls Lab 4**
Students will apply the theory and concepts covered in BTT-251. Students will practice working with ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. They will also work with industrial electrical systems, industrial electronic devices, programmable controllers, welding, boilers, HVAC, mechanical and pneumatic and fluid power systems. Upon completion, students will be able to properly select, connect, and troubleshoot motors and control circuits. (*Prerequisites:* BTT-151, BTT-152; *Co-requisite:* BTT-251)

**BUS-101 Introduction to Business 3**

This course includes a survey of current business practices with an examination of the topics of management, ethics, organization, finance, marketing, and human resources function. Particular attention will be paid to examining the current economic environment. Students will also learn about basic personal income, household money management and financial planning skills as well as basic economic decision-making skills. (SOC | IL, VED)

**BUS-105 Electric Commerce (E-commerce) 3**

Provides a history of the Internet and the online technology resources for ecommerce infrastructure, and strategies used by businesses to incorporate Internet marketing and distribute dynamic advertising opportunities in a global electronic market. This course will also cover the legal issues, economical influences, and practices, and define an online society utilizing e-commerce technology for a vast choice of transactions. Students will be required to complete case exercises that present business examples to associate real-world experience and understanding. Requirements to complete this course include students to develop e-commerce strategies, informative tutorials, and create e-commerce technologies for supported materials such as: advertisements, marketing concepts, ecommerce market analyses, and business services on the Internet. (SOC, TECH | IL, TC)

**BUS-110 Business Research & Reporting 3**

This course focuses on the skills and techniques required to research, write, and format professional business reports. Topics include locating technical specifications, evaluating information, writing specifications, communicating specifications to others, and formatting and presenting information. (COM, SOC | COM, IL, TC)

**CCM-153 Woodworking Hand and Power Tools 5**

Identifying safe operations of stationary woodworking equipment are the core elements of this course. Through demonstration, the student will be introduced to the safe use of the table saw, the radial arm saw, the band saw, the planer, the jointer, the overhead router, the drill press, the shaper. The course will prepare the student to do accurate layout and use proper construction methods.

**CCM-169 Cabinet and Component Construction 5**

The focus of this course is the components and construction of cabinets, face frames, doors and drawers common to the cabinet making industry. Students will learn the theory behind proper cabinet construction. The special operations required on specific woodworking machinery and the assembly of these cabinets' components are practiced in this course. Hinges, pulls, slides and similar door and drawer hardware are also studied, as are the properties of wood and the fasteners used in the carpentry/cabinet making field. The student will continue to learn the safe use of sanding machines, table saw, radial arm saw, band saw, planer, jointer, overarm router, drill press, shaper, and the tenoner.

**CCM-231 Site Layout, Foundations and Framing Principles 5**

This course covers footing and foundation, the use of the structure, soil and climate conditions, methods of construction, and placement of the structure on the lot. Site layout procedures and the use of common leveling instruments are studied. The students then apply the theory with hands-on use of layout tools. Elements of the building codes and zoning laws that apply to site layout procedures are also examined in this course. This course also covers the construction terminology, materials, methods and practical lessons in the various types of floor and wall framing principles found in the construction industry today. Construction terminology, materials estimating, and proper construction techniques give the student a broad knowledge of modern construction practices. (*Prerequisites:* CCM-169, CCM-170)

**CCM-233 Interior/Exterior Finishes 5**

Interior and Exterior Finishes is the study of common materials and procedures used for

finishing the interior and exterior of a building. Students will be exposed to skills in the safe use of equipment and materials common to the construction industry. Among the skills learned are the installation of drywall and cutting and installing interior trim. Students will also learn how to install windows, doors. and exterior siding.

**CCM-235 Roof Framing and Stair Building 5**

This course includes the study of gable roofs, hip roofs, intersecting roofs, and special roof systems. Students will study the applicable building codes, solve for rafter lengths, estimate materials, and other operations required for roof framing. Students will work together to construct different roof systems. Metal work and shingle installation will also be taught. Students will also learn the basics of stair construction including design and configuration of stairs and railings. Students will build a complete staircase and railing system.

**CDT-101 Introduction to Civil Design 3**

This course introduces students to the theory, tools, and techniques of engineering design and creative problem-solving, as well as design issues and practices in civil engineering. The course also exposes the students to issues related to engineering practice such as working in teams, scheduling, evaluating risk and making ethical decisions.

**CDT-121 Civil 3D I 2**

In this course, students will learn to design civil infrastructure using AutoCAD Civil 3D. Students will create topographic surveys by importing field-generated data, develop site parcels using survey data, create site profiles and also learn to use surface and point manipulation tools to reflect existing and future site conditions. Students will also design and create corridors, intersections, and a pressure network, and construct underground utilities. *(Co-requisite*: CDT-122)

**CDT-122 Civil 3D I Lab 2**

This lab session aligns with CDT-121 and enhances the lecture session with practical Computer-Assisted Drafting (CAD) experiences. Students will practice their skills and techniques with the AutoCAD Civil 3D Program creating drawings to industry standards. *(Co-requisite*: CDT-121)

**CDT-123 Surveying and Mapping 3**

This course provides an introduction to theory and practice of geomatics including measurement and computations of distances, angles, and directions. Students will also learn traverse procedures, electronic data collection, calculations, and accuracy standards.

**CDT-124 Construction Materials and Management 3**

This course prepares students for a challenging and rewarding career in management within the construction industry. This option provides students with additional knowledge to organize and manage people, materials, and processes of construction, utilizing the latest technologies within the industry.

**CDT-205 Hydraulics and Hydrology 2**

Principles of hydraulics and hydrology applicable to civil engineering. Topics include hydrologic cycle; measurement and estimation of precipitation; stormwater runoff calculations; stream flow measurement; erosion and sedimentation control measures; hydraulic structure design, including channels, culverts, pipes, inlets, and detention basins; design of sedimentation control devices; current environmental regulations and permits; and computer applications. *(Co-requisite*: CDT-206)

**CDT-206 Hydraulics and Hydrology Lab 1**

This lab aligns with CDT-205. Students will apply the principles of hydraulics and hydrology, practicing the concepts in a lab environment. *(Co-requisite*: CDT-205)

**CDT-207 Erosion and Sediment Control 3**

This course introduces students to the fundamentals of soil erosion and sediment control. Students will also learn planning and design processes, maintenance requirements, and compliance with local, state, and federal regulations.

**CDT-221 Civil 3D II 2**

In this course, students will learn advanced techniques in the AutoCAD Civil 3D modeling software. Students learn advanced roadway modeling, advanced grading, and customization features. Students will become proficient in interchange design, storm water and sewer design, and platform grading and pond design. (*Prerequisite:* CDT-121, CDT-122; *Co-requisite*: CDT-222)

**CDT-222 Civil 3D II Lab 2**

This lab session aligns with CDT-221 and enhances the lecture session with practical Computer-Assisted Drafting (CAD) experiences. Students will practice their skills and techniques with the AutoCAD Civil 3D Program creating drawings to industry standards. *(Co-requisite*: CDT-221)

**CHM-101 Fundamentals of Chemistry 3**

This course emphasizes the fundamentals of basic chemistry. Students will learn the concept of atoms, molecules and compounds. Students will then apply this knowledge to the concepts including arrangement of the periodic table; chemical equations; stoichiometry; states of matter, concentrations, solutions, and pH (including acids and bases).
(*Co-requisite:* CHM-102) (SCI │CAR, SQR)

**CHM-102 Fundamentals of Chemistry Lab 1**

This course emphasizes the fundamentals of basic chemistry through practical experimentation. Students will learn the concept of atoms, molecules and compounds. Students will then apply this knowledge to the concepts including arrangement of the periodic table; chemical equations and reactions; stoichiometry; the gas laws, concentrations, solutions, and pH (including acids and bases). (*Co-requisite:* CHM-101) (SCI │CAR, SQR)

**CIT-181 Computer Hardware and Operating Systems 2**

Provides an introduction with computer information technology concepts that include necessary procedures to conduct repairs, troubleshoot, conduct problem-solving techniques, and perform diagnostics to enhance technology maintenance. This includes repairing hardware, analyzing compatibility specifications, providing upgrades to computing devices, establishing network connections, testing device-port accessibility, troubleshooting errors and problems with malfunctioned computing devices, and maintaining the operations of computer operating systems. The course also provides students with information on safety and environmental issues pertaining to communication and professionalism in handling technology assistance in the field. The knowledge gained in this course will also prepare students to take their CompTIA A+ Essentials and Practical Application certification examinations. (*Co-requisite:* CIT-182)

**CIT-182 Computer Hardware and Operating Systems Lab 2**

The lab provides fundamental practices and is not limited to essential hands-on skills needed to assemble, disassemble, configure, repair, upgrade, optimize, establish diagnostics and perform preventive maintenance on computer hardware, software, and operating systems. This course will also provide topics in safety and environmental issues as well as communication and professionalism in handling technology support which will help prepare students for CompTIA A+ Essentials and Practical Application certification examinations. (*Co-requisite:* CIT-181)

**CIT-183 Network Architectures, Principles, and Protocols 2**

Introduces software and hardware requirements needed to perform technical support, diagnostics, and application of solutions so that communication can be achieved across a constructed network. Students will learn about various network architectures, topologies considered in the field, the principles of network communication and data transferring over a network, and the necessary protocols to provide understanding on how a network functions based on operations. In addition, students will learn about media access techniques, network mediums, cable assessment, and conduct mechanics toward Internet Protocol (IP) addressing. The course will help prepare students with theoretical information from texts, presentations, and test builders for the CompTIA Network+ certification examination. (TECH │ TC, CAR, IL) (*Co-requisite:* CIT-184)

**CIT-184 Network Architectures, Principles, and Protocols Lab 1**

The lab provides students with practices not limited to vendor-neutral hands-on tasks necessary to mock-up, design, and develop network implementations. This includes design, installation, and technical support to modern network systems. Additionally, the lab prepares students to construct network mediums, and conduct testing for signal assurance. The course will also demonstrate safety procedures, and environmental skills to support problem solving, communication, and professionalism in handling real-world problems experienced in computer network settings. The lab will help prepare students with hands-on practices and resources providing information from referential sources significantly correlating to the CompTIA Network+ certification examination. (TECH │ TC, CAR, IL) (*Co-requisite:* CIT-183)

**CIT-185 TCP/IP Network Design Configuration and Maintenance 2**

Provides students with a focus on basic and advanced concepts of computer device and network addressing. This course requires students to understand configuration and troubleshooting techniques to enhance performance in Internetworks. Students will be required to understand the TCP/IP model to enhance skills in network design, configuration, and maintenance to expand on implementations, problem-solving, support, and application of solutions. This course will provide fundamental concepts and practices in subnetting to help construct IPv4 and IPv6 based networks. Knowledge gained in this course will prepare students to study for the CompTIA Network+ certification examination. (*Co-requisite:* CIT-186)

**CIT-186 TCP/IP Network Design Configuration and Maintenance Lab 1**

The lab provides students with hands-on practices and experience to understand basic network design, management, maintenance, and support. This lab also helps students enhance design and development skills in network construction to determine IP mechanics and addressing resolution following the TCP/IP model/protocol suite. In addition, students will learn to configure and support important TCP/IP implementations on Microsoft, Linux, and other network operating system based networks. The students will install and support TCP/IP applications and services to construct a successful computer network device to function on a full-scale network. Additionally, the lab practices and information learned in this course will prepare students for the CompTIA Network+ certification examination. (*Co-requisite:* CIT-185)

**CIT-187 Linux Networking Service and Support 2**

Provides an exploration of the theory behind tools, techniques, procedures, and utilities necessary to design and implement a Linux/UNIX-based network. The course includes comprehensive details about potential areas of network and system configuration, cross-platform configuration, troubleshooting, performance monitoring, and debugging. In addition, the course will provide students with practices in writing shell scripts to perform more advanced techniques and performance monitoring while troubleshooting in a Linux/UNIX environment. Knowledge gained in this course will help students prepare and study for the CompTIA Linux+ certification examination. (*Co-requisite:* CIT-188)

**CIT-188 Linux Networking Service and Support Lab 1**

The lab provides and includes the hands-on exploration of tools, techniques, procedures and utilities necessary to design, implement, and support a Linux-based Local Area Network. The lab work includes but is not limited to comprehensive details of network and system configuration, troubleshooting, performance monitoring, and debugging. Students will write shell scripts for the purpose of performance monitoring and troubleshooting in a Linux environment. "Hands-on" experience gained in this course will help prepare students for the CompTIA Linux+ certification examination. (*Co-requisite:* CIT-187)

**CIT-189 Information System Security Design and Administration 2**

Focuses and provides environment utilization of information technology and the implementation of security practices. The focus of this course includes theory and hands-on experience necessary to pass the Certified Information Systems Security Professional (CISSP) certification examination. Students will learn to design and implement a secure and reliable Local Area Network environment. The course will help students learn about the principles of information security on which managerial strategy can be formulated and how information security solutions need to be available to personnel in the field. This course provides materials and resources to help understand ethics, laws, policies, and recovery programs needed in information technology, as well as drafting many relevant IT security policy statements. In addition, physical security aspects will be covered to understand external prevention. Students will prepare a Disaster Recovery plan for a sustainable & secure network environment; students will use this to begin building their own unique case definition. Knowledge and hands-on experience gained in this course will help prepare students for the CompTIA Security+ certification examination, as well as introductory Cisco certification examinations. (*Co-requisite:* CIT-190)

**CIT-190 Information System Security Design and Administration Lab 1**

The lab includes hands-on experience necessary to pass the CompTIA Security+ certification examination. Students will learn to design and implement secure standards, policies, and network implementations to a reliable computer network environment. Administration of both Windows and Linux systems will be referenced so that students can learn cross-platforms and understand the user and groups with permissions within a network. In addition, students will be drafting policies and documentation to enforce information security practices and procedures in the professional field of computer networks and sciences. Physical security enforcement and implementations will be considered in projects to enhance network environments. Disaster recovery and planning procedures will be designed and developed as a major part of the course to conclude how businesses/organizations function and operate after a disruptive scenario occurs. Students design a Disaster Recovery Plan and will begin portfolio building and project demonstration. (*Co-requisite:* CIT-189)

**CIT-191 CompTIA A+ Certification Study Course 1**

This A+ Certification Preparation Course is designed to equip participants with knowledge and skills necessary to pass the CompTIA A+ certification exams (220-1001 and 220-1002). The A+ certification is widely recognized by industry standards for validating foundational skills in information technology support, diagnostics, and troubleshooting. Throughout this course students will learn key concepts and practical applications essential for success in the field. The curriculum covers a wide range of topics including: hardware, networking, mobile devices, operating systems, security, and troubleshooting techniques.

**CIT-281 LAN/WAN Design and Maintenance Principles 2**

This course includes exploration of exercises essential to designing, securing, and constructing affected routed LAN and WAN networks. Students will also gain hands-on experiences in creating virtual networks and using trunk ports. Additionally, students will work with packet analysis and IP addressing in a larger scale network utilizing skill-based

assessment and presentation. The hands-on experience and materials will help prepare students for the Cisco CCNA 200-301 examination. (*Prerequisites:* CIT-185, CIT-186; *Co-requisite:* CIT-282)

**CIT-282 LAN/WAN Design and Maintenance Principles Lab 1**

The focus of this lab includes the exploration of lab exercises essential to designing, securing, and building an effective routed Local and Wide Area Networks. Students will also gain "hands-on" experience creating VLANS and trunk ports. "Hands-on" experience gained in this course will help prepare students for the Cisco CCNA 200-301 examination. **(***Prerequisites:* CIT-185, CIT-186; *Co-requisite:* CIT-281)

**CIT-283 Server and Network Operating System Principles 2**

Provides students the related theory of installation and configuration with Windows Servers operating systems. This course will provide skills necessary to configure, conduct support for client operating systems on computer networks. Additionally, an in-depth, hands-on training on network operating systems will prepare the students for expected industry situations. The course is not limited to both the theory of on-site and remote services in supporting network servers. The theory covered in this course includes interconnections of multiple servers. Students will learn to utilize Active Directory, Event Viewer, and other network services to demonstrate operating systems and server management practices. Students successfully completing this course will gain knowledge to prepare them for Microsoft MCSA certifications. (*Co-requisite:* CIT-284)

**CIT-284 Server and Network Operating System Principles Lab 1**

This lab focuses on hands-on experience related to support, maintenance, and information retrieval of operating system performances pertaining to network management. This includes on-site and remote connection to a server-based network in supporting network activity. The hands-on practices include installation, implementation of network devices, inspection of network mediums, local and remote management, file storage capabilities over a network, Active Directory, Event Viewer, system logs, group policies, and services pertaining to TCP/IP and Hyper-V. Students successfully completing this lab will gain hands-on practices and knowledge to prepare them for Microsoft MCSA certifications. (*Co-requisite:* CIT-283)

**CIT-285 Advanced Network Operating System Principles 2**

The focus of this course provides students with advanced theory and principles related to industry standard server Network Operating System platform and server virtualization. Theory of Installation, configuration and remote administration of both Host Network Operating Systems and Guest Network Operating System network services and Active Directory will be covered in detail. Theory relating to service and support of both Microsoft and Linux based server platforms, as well as Microsoft Internet Information Server will be explored. (*Co-requisite:* CIT-286)

**CIT-286 Advanced Network Operating System Principles Lab 1**

The focus of this lab includes "hands-on" experience related to Microsoft's newest server platform and features. The scope of the "hands-on" experience in this lab includes but is not limited to Storage Space Direct, Nano Server, and Windows Containers, and Hyper-V virtualization. Installation, configuration and remote administration of both Host Network Operating Systems and Guest Network Operating Systems. Students successfully completing this lab will gain "hands-on" knowledge required to obtain the Microsoft MCSA, as well as the Cloud Platform and Infrastructure certification. (*Co-requisite:* CIT-285)

**CIT-289 Web Programming, Server-Side Scripting 2**

Provides and introduces scripting technologies, and additional platforms to obtain and host web content. Technologies will also be used to develop websites into user-interactive

applications. PHP will be utilized minimally, but allow students to work with programming arrays, logics, and event modeling to produce dynamic content via server resources. In addition, students will also learn how to create and manage web content by utilizing cascading style sheets, JavaScript, and extensible markup language (XML). The final project of the course is to design a fully functional website that will be hosted via a web server, and present a final web portfolio. **(***Prerequisites:* CIT-283, CIT-284, DAT-201, PRG-101; *Co-requisite:* CIT-290)

**CIT-290 Web Programming, Server-Side Scripting Lab 1**

This lab focuses on the introduction of server-side scripting and web data access using a currently popular server-side application platform and relational database. Additionally, the use of scripting languages will help students program organizational websites and applications, cover object-oriented programming in web environments, and produce content via server resources. (*Prerequisites:* CIT-283, CIT-284, DAT-201, PRG-101; *Co-requisite:* CIT-289)

**CIT-291 AWS Cloud Technologies 3**

The focus of this lab includes, but is not limited to an introduction to server-side scripting and web data access using a currently popular server-side application platform and relational database. (*Prerequisites:* CIT-281, CIT-282, CIT-283, CIT-284)

**COM-111 Communication Theory 3**

This course addresses specialized communication that helps readers and/or listeners respond to the challenges of corporate culture while being ethically and legally responsible. Class content focuses on acquiring the tools/strategies needed for effective workplace communication and creating effective workplace documents based on the understanding that different customers and audiences affect how information is conveyed. Students cannot take ENG 105 if they complete COM-111. (*Prerequisite:* ENG-101) (COM, HUM │COM, VED)

**COM-112 Public Speaking 3**

Stressed in this course is the importance of oral communication for understanding, evaluating, and explaining various occupationally-related conditions. The course content includes theory and practice in the organization, preparation, delivery, and evaluation of extemporaneous discourse. Each student completes a variety of types of speeches. (COM │COM)

**CPT-101 Microcomputer I 3**

This course provides a basic overview of microcomputer fundamentals and applications, including a study of word processing using Microsoft Word, spreadsheet applications using Microsoft Excel, presentations using PowerPoint, email using Outlook, as well as the integration of all the applications. The student is also exposed to basic computer operations, managing files, and a brief introduction to Sway, Edge, Office Mix, and OneNote. (TECH │TC)

**CSA-101 Introduction to Cybersecurity 3**

This course will familiarize students with the basic skills and foundational concepts in cybersecurity. Students will learn basic skills in security principles, types of attacks, and defense mechanisms.

**CSA-103 Networking Fundamentals 3**

This course provides the basics of networking, understanding topologies and architectures, and how attacks can occur. In addition, students will learn basic concepts in navigating, troubleshooting, and diagnosing network problems. Topics also include OSI model, TCP/IP routing, switching, and virtual networks.

**CSA-121 Ethical Hacking and Penetration Testing 3**
This course provides an opportunity for students to apply theory and concepts to perform penetration testing on different systems. Students will understand how to identify vulnerabilities before malicious acts can exploit them.

**CSA-123 Cybersecurity Policies and Governance 3**
This course covers general security principles and understanding how to develop and implement policies and procedures. Students will be introduced on creating and managing cybersecurity policies, compliance, and governance in organizations.

**CSA-141 Cryptography and Data Security 3**
This course explores how encryption techniques are used to secure data at rest, in transit, and in use. Students will gain experience with cryptography tools and understand their application in securing communication and data.

**CSA-143 Incident Response and Digital Forensics 3**
This course focuses on processes involved in detecting, responding to, and investigating cybersecurity incidents. Students will learn how to deploy an incident response life cycle and use forensic tools for evidence collection. Students will understand how to manage incidents, disaster recovery, and perform digital forensics to identify cause and perpetrators of security breaches.

**CSA-151 Cloud Security 3**
This course introduces students to cloud computing concepts and tools. Students will learn how to utilize cloud computing tools to secure the infrastructure, applications, and data. Topics include cloud architectures, service models, cloud security challenges, and best practices of security for AWS, Azure, and Google.

**CSM-105 Customer Service and Our World 3**
This course explores today's business landscape and the forces influencing culture and consumers including media, art, religion, socioeconomics, geopolitics, and literature. It provides a solid foundation for understanding customers and the philosophy of customer service from the perspective of several different industries. Students will utilize and observe service-first verbal and nonverbal communication skills while engaging in role play, case studies, and activities that will stress the importance of customer satisfaction. (COM, HUM, SOC | COM, VED)

**DAS-201 Driver Assistance Systems 2**
This course will provide students with essential knowledge of modern Driver Assistance Systems. These systems include Adaptive Cruise Control, Forward Collision Warning, Collision Mitigation Braking, Lane Departure Warning, Lane Keeping Assistance, LaneWatch Blind Spot System, Rain Sensing Wipers, Rear View Camera, Cross Traffic Alert, Reverse Automatic Braking (Subaru), Steering Responsive Headlights, Auto High Beams, Android Auto & Apple CarPlay Smartphone integration, Enhanced Active Park Assist, Traffic Sign Recognition, and Front and Rear Park Assist, among others. By learning about these systems, students will gain the skills to recognize how they function and stay up to date with the latest automotive technology. (Prerequisites: AUT-263, AUT-264)

**DAT-201 Database: Principles & Applications 3**
This course provides an introduction to databases for information systems, businesses, or CIS programs. Topics will include Access, QBE, SQL, normalization, design methodology, DBMS functions, database administration, and other database management approaches such as distributed databases, data warehouses, and XML. This course helps students to learn about data management, file organization, and data structures involved in the design, implementation, and use of a database management system. This course provides an introduction on SQL scripting. At the completion of this course, students should be able to

understand a user's database requirements and translate requirements into a valid database design. (*Prerequisite:* PRG-101)

**DAT-203 Database Management Systems 3**

This course is a continuation of DAT-201, with advanced topics of design, implementation, and use of database management systems. Involves skills in the design and development of information systems and their application and combines form and report components into a single integrated system. Students will learn to construct advanced query components and apply managerial tasks to report data finding for analytical use. The operation of functional dependence and configuration of hosted platforms to support a database project will be instructed in this course. (*Prerequisite:* DAT-201)

**DTT-129 Transportation & Safety Certifications 2**

This course is designed to provide necessary training and practical testing to assist in obtaining certifications for OSHA 10 Automotive Safety, MSHA Mine Safety Training Part 46, PA State Safety Inspections License, and Forklift Safety and Operating License. These certifications will provide students with credentials that employers in the transportation industry seek.

**DTT-153 Brake Systems for Diesel 2**

This course covers information on hydraulic and air brake systems. Mechanical foundation, air supply, service system principles, major components, parking brake systems, brake system diagnostics, service to drum brake assemblies, air lines and hoses, brake switches, anti-lock brake principles and service are all a part of this course. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. (*Co-requisite:* DTT-154)

**DTT-154 Brake Systems for Diesel Lab 1**

This lab course provides hands-on experience with hydraulic and air brake systems. The course will cover mechanical foundation, air supply, service system principles, major components, parking brake systems, brake system diagnostics, drum brake assembly service, air lines and hoses, brake switches, and anti-lock brake principles and service. The course also focuses on high-priority tasks recommended by ASE (Automotive Service Excellence). (*Co-requisite:* DTT-153)

**DTT-155 Steering and Suspension Systems for Diesel 3**

This course covers information on steering and suspension systems, theory and principles, independent suspensions, geometric principles, factors affecting wheel alignment, tools and equipment used for steering and suspension, troubleshooting of suspension and steering, wheel bearings service, manual steering and power steering system operation. This lecture on theory will prepare students to take the ASE technician certification test for steering and suspension systems.

**DTT-159 Advanced Electrical Systems for Diesel 2**

This course is designed to teach advanced diagnostic techniques, wire diagram reading with troubleshooting trees, and test equipment used in today's diesel-powered equipment industries. Students will be exposed to real world electrical and electronic problems. Critical and deductive thinking skills will be used to solve problems through a bottom-up and top-down approach. (*Prerequisite:* IET-101; *Co-requisite:* DTT-160)

**DTT-160 Advanced Electrical Systems for Diesel Lab 1**

This hands-on lab provides hands-on experience in advanced diagnostic techniques, wire diagram reading with troubleshooting trees, and test equipment used in today's diesel-powered equipment industries. Students will be exposed to real world electrical and electronic problems. Critical and deductive thinking skills will be used to solve problems

through a bottom-up and top-down approach. (*Prerequisite:* IET-101; *Co-requisite:* DTT-159)

**DTT-177 Diesel Fuel Injection and Emissions 2**
This course covers information on the theory and operation of the different types of diesel fuel injection pumps, nozzles and injectors, including current electronic fuel injectors. Fuel system preventive maintenance, troubleshooting diagnostics, injection pump timing and installation procedures, and replacement methods for injectors and nozzles are taught. *(Co-requisite:* DTT-178)

**DTT-178 Diesel Fuel Injection and Emissions Lab 1**
This lab experience includes competency tasks on the diagnosis and service of the different types of diesel fuel injection pumps, nozzles and injectors, including current electronic fuel injectors. In-depth servicing and repair of fuel system preventive maintenance, troubleshooting diagnostics, injection pump timing and installation procedures, and replacement methods for injectors and nozzles are practiced in this lab. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. *(Co-requisite:* DTT-177)

**DTT-179 Diesel Engine Performance Tune-up Procedures 2**
This course covers information and theory on the operation and approved servicing, troubleshooting, and tune-up procedures on several different current models of diesel engines. *(Co-requisite:* DTT-180)

**DTT-180 Diesel Engine Performance Tune-up Procedures Lab 2**
This lab includes competency-based tasks on the operation and approved servicing, troubleshooting, and tune-up procedures on several different current models of diesel engines. Students will practice these competencies and be assessed on industry standards. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. *(Co-requisite:* DTT-179)

**DTT-277 Manual Transmission Overhaul 2**
This course covers the information and theory of heavy-duty truck manual transmissions. New learning experiences include inspection, replacement, servicing, rebuild procedures, proper diagnostics of manual transmissions and power take-off systems. *(Co-requisite:* DTT-278)

**DTT-278 Manual Transmission Overhaul Lab 1**
This lab includes competency-based tasks on the operation and approved servicing, troubleshooting, and tune-up procedures on several different current models of diesel engines. New learning experiences include inspection, replacement, servicing, rebuild procedures, proper diagnostics of manual transmissions and power take-off systems. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. *(Co-requisite:* DTT-277)

**DTT-279 Differentials and Drive Line 3**
This course covers the theory of operation of the heavy-duty truck differentials and drive lines. Students will learn how the differential is used to transfer energy to the wheels of the vehicle. Students will be trained in the theory of transferring engine power to the final drive of the vehicle utilizing the drive shaft. All components of this system will be described and the operation of each will be explained. This includes competency-based tasks on overhaul, service and troubleshooting of the rear differentials and drive shafts. All safety procedures involved in working with differentials and drive lines will be followed while participating in the lab activities. High priority tasks recommended by ASE (Automotive Service Excellence) are covered.

**DTT-281 Automatic Transmission Diagnostics, Basic Hydraulics 2**
This course provides information and practical theory necessary to service automatic transmissions found in many heavy diesel trucks. It includes systematic troubleshooting procedures to guide technicians in the proper repair, installation, and maintenance of hydraulic systems. *(Co-requisite:* DTT-282)

**DTT-282 Automatic Transmission Diagnostics, Basic Hydraulics Lab 1**
This lab will have students performing competency tasks that include but are not limited to transmission removal, disassembly, component inspection and measurements, and reassembly. The lab includes systematic troubleshooting procedures to guide technicians in the proper repair, installation, and maintenance of hydraulic systems. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. (*Co-requisite:* DTT-281)

**DTT-283 Applied Diesel Truck Principles and Applications 2**
This course is intended to re-examine and emphasize specific mechanical knowledge and diagnostic experience and to apply that to principles and theories learned in previous courses. Students are expected to improve their specific skills to prepare them for entry-level positions upon graduation. *(Co-requisite:* DTT-284)

**DTT-284 Applied Diesel Truck Principles and Applications Lab 2**
This lab is intended to re-examine and emphasize specific mechanical skills and diagnostic techniques and to apply them to principles and theories learned in previous courses. Students are expected to hone the specific skills by performing competency tasks to industry standards. Doing this will prepare students for entry-level positions upon graduation. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. *(Co-requisite:* DTT-283)

**DTT-285 Diesel Engine Overhaul 2**
Diesel engine principles of operation on four- and two-stroke engines are covered. Component identification, measurement and replacement, along with complete tear down and overhaul procedures are covered in this course. *(Co-requisite:* DTT-286)

**DTT-286 Diesel Engine Overhaul Lab 2**
Diesel engine principles of operation on four- and two-stroke engines are covered with competency-based tasks the students are required to perform. Component identification, measurement and replacement, along with complete tear down and overhaul procedures are practiced in this lab. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. *(Co-requisite:* DTT-285)

**DTT-287 Advances in Diesel Truck Technology 2**
This course covers advancements in truck subsystems, including vehicle onboard radar, lane departure systems, heads-up displays, roll stability, traction control, electric vehicles, and hybrid vehicles. It includes descriptions of system operation, component identification, diagnostic procedures, tooling, and how OEMs integrate these technologies.

**ECO-101 Principles of Economics 3**
This course covers the basic concepts of economics. Topics may include supply and demand, optimizing economic behavior, prices and wages, monetary system, interest rates, banking system, unemployment, inflation, taxes, government spending and international trade. Upon completion, students should be able to explain alternative solutions for economic problems faced by private and government sectors. (SOC | CAR, IL)

**ECT-161 Residential Wiring 2**

Students will discuss general safety principles, basic construction guidelines and laws governing electricity, basic hand tool usage, print reading, electrical safety, circuit construction and operation. (*Prerequisites:* BTT-105, BTT-106; *Co-requisite*: ECT-162)

**ECT-162 Residential Wiring Lab 4**

Students will apply general safety principles, basic construction guidelines and laws governing electricity, basic hand tool usage, print reading, electrical safety, and circuit construction and operation. Lab times for this course will be scheduled both on and off campus. (*Prerequisites:* BTT-105, BTT-106; *Co-requisite*: ECT-161)

**ECT-260 Applied Practice and Special Topics Lab 4**

This course allows the student to apply the concepts covered in previous ECT courses. Students will apply diagnostic techniques in all areas of previous study. Students are expected to hone the specific skills to prepare them for entry-level positions upon graduation. (*Prerequisites:* BTT-105, BTT-106, BTT-151, BTT-152, ECT-161, ECT-162, ECT-271, ECT-272, ECT-273, ECT-276, ECT-277, ECT-278, MEC-245, MEC-246; *Co-requisites*: BTT-251, BTT-252)

**ECT-271 Electrical Grounding, Bonding, & Service Installation 1**

This course is a continuation of Residential Wiring. The focus of this course is problem-solving skills in panel board selection, electric service, and overcurrent protection such as fuses and circuit breakers, as well as low voltage lighting and cooling systems. AC circuit theory will continue to be discussed in this course. (*Co-requisite*: ECT-272)

**ECT-272 Electrical Grounding, Bonding, & Service Installation Lab 2**

Students will apply the concepts and theories discussed in ECT-271. The focus of this course is problem-solving skills in panel board selection, electric service, and overcurrent protection such as fuses and circuit breakers, as well as low voltage lighting and cooling systems. AC circuit theory will continue to be discussed in this course. (*Co-requisite*: ECT-271)

**ECT-273 National Electric Code Interpretation 1**

The purpose of this course is to locate and interpret the sections in the National Electric Code (NEC) pertaining to electrical installations; calculate the size of conductors, boxes, raceways, and overcurrent protective devices for branch circuits supplying electrical equipment, calculate conductor size, overcurrent protection for service equipment as applied to building services and compute the size of branch circuits, feeders and equipment for motors.

**ECT-275 Commercial Wiring 1**

This course covers information on installing electrical systems for commercial buildings, and reading architectural drawings and branch circuit feeders. It will also discuss appliances and special systems found in commercial buildings. Three phase circuits and inductive loads will be covered in this course. (*Co-requisite*: ECT-276)

**ECT-276 Commercial Wiring Lab 2**

This course provides practical experience in installing electrical systems for commercial buildings and reading architectural drawings and branch circuit feeders. Students gain practical experience in conduit bending. Three phase circuits and inductive loads will be covered in this course. Lab times for this course will be scheduled both on and off campus. *(Co-requisite*: ECT-275)

**ECT-277 Industrial Maintenance and Mechanics 2**

This course covers the theory and practice of industrial mechanics including calculations, rigging, lifting, ladders, hydraulics, lubrication, flexible belt drive systems, vibration and

alignment. This course discusses service and repair principles and practices for industrial electrical systems, industrial electronic devices, programmable controllers, boilers, HVAC, mechanical, pneumatic and fluid power systems. (*Co-requisite*: ECT-278)

**ECT-278 Industrial Maintenance and Mechanics Lab 1**
Students will practice industrial mechanics including calculations, rigging, lifting, ladders, hydraulics, lubrication, flexible belt drive systems, vibration and alignment. Students will also practice service and repair principles and practices for industrial electrical systems, industrial electronic devices, programmable controllers, boilers, HVAC, mechanical, pneumatic and fluid power systems. *(Co-requisite*: ECT-277)

**EET-101 Introduction to Electronic Equipment 1**
In today's technology-driven world, understanding and effectively utilizing test equipment is crucial for technicians in various fields. This comprehensive course, "Introduction to Test Equipment," provides a solid foundation for using essential tools such as digital multimeters, oscilloscopes, function generators, and DC power supplies. Through the application of hands-on practical exercises, participants will gain the skills necessary to confidently and proficiently operate these instruments. *(Co-requisite:* EET-161 or EET-163)

**EET-161 DC Electricity and Instrumentation 2**
This course introduces the student to the theory and operation of basic DC circuits, circuit construction, operation and troubleshooting. Basic alternative energy technologies are introduced. The student will also receive instruction on soldering, digital multimeter usage, and Ohm's Law applications for testing and troubleshooting electric circuits. Elements of proper disposal of batteries and other circuit components considered to be hazardous waste are included. *(Co-requisite:* EET-162) (SCI, TECH │CAR, SQR)

**EET-162 DC Electricity and Instrumentation Lab 1**
This course applies the theory taught in EET-161 through hands-on building and testing of basic electric circuits. The student will also gain practical experience in soldering, digital multimeter usage, and Ohm's Law applications for testing and troubleshooting the electric circuits they build. Elements of proper disposal of batteries and other circuit components considered hazardous waste are emphasized throughout this course. *(Co-requisite:* EET-161) (SCI, TECH │CAR, SQR)

**EET-163 Alternating Current and Passive Devices 2**
This course introduces the student to circuitry basic to AC electrical theory. It identifies the fundamental differences between AC and DC energy sources and circuit components. It also introduces oscilloscope usage, AC units, nomenclature and electromagnetism. The course also covers inductors, transformers, and capacitors and their effects in AC circuits. Workplace energy efficiency and conservation habits are included. The concepts of RLC circuits and their use as passive filters will be covered. *(Co-requisite:* EET-164) (SCI, TECH │CAR, SQR)

**EET-164 Alternating Current and Passive Devices Lab 1**
This course applies the theory taught in EET-163 through hands-on building and testing of basic AC circuits. The student will use oscilloscopes and digital meters to measure amplitude, frequency and phase of an AC signal. As the student progresses through the course, test equipment will be used to test transformers, inductive circuits, capacitive circuits, and passive filters. The student will also be introduced to troubleshooting techniques and have time to practice those techniques on circuits they build. *(Co-requisite:* EET-163) (SCI, TECH │CAR, SQR)

**EET-165 Digital Electronics 2**

This course begins by familiarizing the student with the fundamental gates, numbering systems and simplification techniques used for the implementation of digital circuitry. It continues by introducing the student to the different digital codes, seven segment displays and flip-flops with emphasis placed on schematic interpretation, nomenclature and troubleshooting. This course continues with the investigation of the circuits used for counters, registers, arithmetic logic circuits and digital to analog interfacing. It examines the circuitry of each section with emphasis on circuit timing, characteristic waveforms and troubleshooting. *(Co-requisite:* EET-166)

**EET-166 Digital Electronics Lab 2**

This course is designed to provide the student with hands-on testing and troubleshooting of the digital circuits discussed in EET-165. The circuits investigated will begin with basic logic gates and continue through flip-flops, counters, and shift registers. The student will be expected to use test equipment, such as the oscilloscope, digital meter and logic probe, to test and troubleshoot the circuits built throughout this course. *(Co-requisite:* EET-165)

**EET-167 Introduction to Semiconductors 2**

This course provides an introduction to semiconductor theory, the different types of semiconductor components, their symbols, characteristics, and uses. Basic power supplies, small signal amplifiers, large signal amplifiers and coupling techniques are covered. This course will concentrate on characteristic waveforms, theory and troubleshooting. Practice is provided regarding diodes, transistors and circuit applications. Sustainable practices to minimize resources and chemical use are an integral part of the course. (*Prerequisites*: EET-161, EET-162, EET-163, EET-164; *Co-requisite:* EET-168)

**EET-168 Introduction to Semiconductors Lab 1**

This course provides the student with the opportunity to apply the theoretical concepts from EET-167 to real world circuits. The student will use various pieces of test equipment to verify circuit operation and to troubleshoot circuits that are faulty. At all times safety will be emphasized throughout this course. Some of the circuits included in this course are rectifiers, voltage multipliers, amplifiers from the bipolar junction transistor and the field effect transistor families. The student will use digital meters and oscilloscopes to evaluate the operational performance of the circuits used in this course. (*Prerequisites*: EET-161, EET-162, EET-163, EET-164; *Co-requisite:* EET-167)

**EET-169 Integrated Circuits and Thyristors 2**

This course provides an introduction to integrated circuits through the operational amplifier, its characteristics and configurations. Amplifier troubleshooting is included, highlighting methods of determining causes of failures and locating problems. This study of integrated circuits will continue by investigating the operation of integrated voltage regulators and the 555 universal timer. The thyristors family of electronic components is introduced through lecture to identify the characteristics, circuitry, and methods of troubleshooting this family of components. (*Prerequisites*: EET-161, EET-162, EET-163, EET-164; *Co-requisite:* EET-170)

**EET-170 Integrated Circuits and Thyristors Lab 1**

This course will provide the student the opportunity to work with operational amplifiers, integrated voltage regulators and 555 universal timers. These devices and others will be used to build and troubleshoot amplifiers, active filters and power supply circuits. The thyristors family of electronic components is also investigated through experimentation, testing and troubleshooting. (*Prerequisites*: EET-161, EET-162, EET-163, EET-164; *Co-requisite:* EET-169)

**EET-261 Communication Electronics 2**

This course begins by familiarizing the student with the fundamental theory, safety, circuits and test equipment used in communications. The course continues to cover modulation techniques, transmitters, receivers, transmission lines and antennas. The topics of safety and testing of communication circuits are an integral part of this course. (*Prerequisites*: EET-163, EET-164, EET-165, EET-166, EET-169, EET-170; *Co-requisite:* EET-262)

**EET-262 Communication Electronics Lab 1**

This course has the student work with test equipment used to design and evaluate circuits common to the communications industry. Students in this course will work with oscilloscopes, spectrum analyzers, digital meters, RF meters, ELVIS and LabVIEW testing environments. Construction, safety and testing of communication circuits are an integral part of this course. (*Prerequisites*: EET-163, EET-164, EET-165, EET-166, EET-169, EET-170; *Co-requisite:* EET-261)

**EET-265 Applied Electronics Principles & Applications 2**

In this course, the students will work on a project to advance the lab space. Projects will be cycled based on the group's interests. Elements from each of their previous courses will be used and needed to complete this course successfully. Students will be expected to hone their practical skills to better prepare them for an entry-level position upon graduation. (*Prerequisites:* MEC-245, MEC-246, ART-127; *Co-requisites:* EET-266, MEC-255, MEC-256)

**EET-266 Applied Electronics Principles & Applications Lab 2**

In this course students will evaluate pieces of test equipment to hone their skills in measurement and troubleshooting in various scenarios. The students will be expected to work with oscilloscopes, digital meters, spectrum analyzers, soldering equipment, other pieces of test equipment, and time management in practical settings. (*Prerequisites:* MEC-245, MEC-246, ART-127; *Co-requisites:* EET-265, MEC-255, MEC-256)

**ENG-101 English Composition I 3**

This course develops writing competency through the students' construction of essays and an academic research paper. Outlining, mechanics, syntax, and format are stressed in all writing assignments. (COM │COM, IL)

**ENG-105 Industry Communication 3**

This course addresses the written and oral communication required every day in industry and corporate culture regarding customers, peers, supervisors, and employees. Students learn how to express purpose, workplace ethics, and psychological empathy, among other concepts, in workplace communication pieces such as proper email etiquette, memos, and various types of letters. Students cannot take COM 111 if they complete ENG-105. (COM, HUM │COM, VED)

**ENT-101 Entrepreneurship I 3**

This course acquaints the student with a realistic approach to the problems and concerns of starting a small business. An understanding of the economic and social environment within which the small business functions will be developed. The student will be familiarized with the writing of a business plan. (HUM, SOC │CAR, IL, VED)

**HAC-189 Refrigeration 2**

This course familiarizes the students with safety procedures, tools and materials, principles of operation, and real-world applications relevant to refrigeration. Students will become familiar with the pressure-temperature relationship and the refrigeration cycle. This course will cover various refrigeration equipment including items such as household refrigerators, reach-in, walk-in, prep tables and ice makers. Students will also discuss preventative

maintenance and troubleshooting techniques on various refrigeration equipment. (*Co-requisite:* HAC-190)

**HAC-190 Refrigeration Lab 4**
This course provides the opportunity for students to apply the theory and concepts of HAC-189. Students will practice safety procedures while using tools and materials to apply principles of operation and applications relevant to refrigeration. Students will troubleshoot, maintain and repair various refrigeration units. (*Co-requisite:* HAC-189)

**HAC-283 Heating System Design & Installation 2**
This course covers the study of various hydronic and forced air systems. Students will discuss installation, order of operation, startup procedures, combustion analysis, and zoning options. This course also covers the study of natural gas, propane, fuel oil and electric heating systems. Heat loss formulas are studied and used to determine the heating needs within a variety of climate zones. Students will also discuss preventative maintenance and troubleshooting techniques on various heating systems. (*Prerequisites:* BTT-103, BTT-151, BTT-152; *Co-requisite:* HAC-284)

**HAC-284 Heating System Design & Installation Lab 4**
This course provides the opportunity for students to apply the theory and concepts of HAC-283 Heating System Design & Installation. Students will practice safety procedures while using tools and materials to apply principles of operation and applications relevant to heating systems. Students will install, troubleshoot, maintain, and repair various heating systems. (*Prerequisites:* BTT-103, BTT-151, BTT-152; *Co-requisite:* HAC-283)

**HAC-285 Air Conditioning Systems 3**
This course exposes the students to the design, operation and installation of various air conditioning and heat pump systems. All of the systems' components are studied in relation to their compatibility for ventilation, air handling and climate control. Students will also discuss and apply installation, troubleshooting and preventative maintenance techniques on various systems. *(Prerequisites:* BTT-151, BTT-152, HAC-189, HAC-190*)*

**HAC-287 EPA Section 608 Certification 1**
This course is intended to prepare students for the successful completion of the Environmental Protection Agency's (EPA) Section 608 Certification examination. Section 608 of the Clean Air Act requires that anyone who maintains, services, repairs, or disposes of equipment that could release refrigerants into the atmosphere must be certified. (*Prerequisites:* HAC-189, HAC-190; *Co-requisite:* HAC-285)

**HAC-290 Applied Practice and Special Topics Lab 4**
This course allows the student to apply the concepts covered in previous HAC courses. Students will apply diagnostic techniques in all areas of previous study. Students are expected to hone the specific skills to prepare them for entry-level positions upon graduation. (*Prerequisites:* BTT-103, BTT-105, BTT-106, BTT-151, BTT-152, HAC-189, HAC-190, HAC-283, HAC-284, HAC-285, HAC-287)

**HAC-291 Commercial HVAC/R 3**
This course is designed to apply previously acquired skills to a commercial application. The focus of this course is to introduce students to larger commercial and light industrial type equipment. This course will also apply knowledge to installation, sizing, and troubleshooting. (*Prerequisites:* BTT-103, BTT-151, BTT-152, HAC-189, HAC-190, HAC-283, HAC-284, HAC-285)

**HAC-293 Introduction to Building Automation Systems 3**
This course provides an introduction of Building Automation Systems (BAS). Students will gain a thorough understanding of how BAS integrates with HVAC systems to enhance

energy efficiency, optimize comfort, and streamline building operations. The course will cover the design, installation, and maintenance of building automation control systems. Students will also work with sensors, low voltage controllers, and software commonly used in BAS. (*Prerequisites:* BTT-151, BTT-152, HAC-189, HAC-190, HAC-283, HAC-284, HAC-285)

**HMN-101 Introduction to Humanities 3**

This course creates an appreciation for cultural values and differences as portrayed in music, painting, architecture, video and literature. When possible, examples that include multiple arts are studied. Diversity is stressed in all examples. (HUM | VED)

**HST-103 American Government 3**

This course examines American democracy by looking at the dynamic interaction between the founding ideals of the United States government, the institutions established by the Constitution, and the ongoing struggle for power within and through those institutions. Students will learn how Congress, the Presidency, and the Supreme Court shape law and public policy. Additionally, students will learn how the electoral process influences the decisions of voters and political parties and how cultural aspects such as the media, interest groups, political action committees, and public opinion impact political outcomes. (HUM | VED)

**IET-101 Introduction to Diesel Electricity & Electronics 3**

This course covers the basic theories of electricity. It discusses how voltage, current, and resistance work as a unit to be what we consider electrical flow. It covers Ohm's Law, Watt's Law, electrical components, basic wiring diagram understanding, and lighting, giving the student information needed to understand electricity and how to test it. This background and basic knowledge help the student understand how electricity works and assists in troubleshooting problems identified in diesel trucks. It discusses the basic fundamentals of structure of matter and develops into a discussion of series, parallel, and series-parallel circuits. It covers the basic structure of conductors and insulators, and the theories of magnetism and magnetic fields.

**INT-299A Internship 1**

This course is designed to provide students with the opportunity to apply the knowledge and skills learned in previous coursework in an authentic industry setting. Students will further develop and enhance their career-readiness through supervised training in their discipline of interest. (CAR, VED)

**INT-299B Internship 2**

This course is designed to provide students with the opportunity to apply the knowledge and skills learned in previous coursework in an authentic industry setting. Students will further develop and enhance their career-readiness through supervised training in their discipline of interest. (CAR, VED)

**INT-299C Internship 3**

This course is designed to provide students with the opportunity to apply the knowledge and skills learned in previous coursework in an authentic industry setting. Students will further develop and enhance their career-readiness through supervised training in their discipline of interest. (CAR, VED)

**INT-299D Internship 4**

This course is designed to provide students with the opportunity to apply the knowledge and skills learned in previous coursework in an authentic industry setting. Students will further develop and enhance their career-readiness through supervised training in their discipline of interest. (CAR, VED)

**MAT-100 Applied Mathematics for Welders 3**
This course is an examination of basic arithmetic, (adding, subtracting, multiplying, and dividing whole numbers, decimals and fractions) as well as percentages. This course also covers metric system measurements, computation of geometric measure and shapes, angular development and measurement, and including bends, stretch outs, economical layout and takeoffs. (MAT │CAR, SQR)

**MAT-101 College Algebra I and Trigonometry 3**
This course covers linear equations and inequalities, ratio and proportions, basic operations involving algebraic, polynomial and rational expressions, exponent rules and factoring, an introduction to geometry, including perimeter, area and volume, right triangle trigonometry and radian measure. (MAT │CAR, SQR)

**MAT-103 Technical Math 3**
Applied Technical Mathematics is designed to develop a student's math ability, by focusing on math skills that apply in today's work environment. Practical math skills are emphasized, as well as their connection to real world application. (MAT │CAR, SQR)

**MAT-105 Math for Transportation Division 3**
This course provides a review of basic arithmetic concepts (addition, subtraction, multiplication, and division) as well as decimals, fractions, and formulas. Proper measurement and analyzing specifications are also covered. The course then moves into practical application of these math skills to real-world vehicle procedures, data, and specifications. (MAT │CAR, SQR)

**MAT-110 Trigonometry 3**
This course investigates angles, triangles, trigonometric functions and equations, radian and degree measurements, circular functions, graphs, identities, vectors, complex numbers, polar coordinates, parametric equations, and applications. (*Prerequisite*: MAT-101) (MAT │CAR, SQR)

**MAT-121 Introduction to Statistics 3**
This course is intended to introduce students to the basic concepts of data collection, data analysis and statistical inference. Topics include an overview of observational and experimental study designs, graphical and numerical descriptive statistics, probability distributions for simple experiments and random variables, sampling distributions, confidence intervals and hypothesis testing for the mean and proportion in the one sample case. The emphasis is on developing statistical reasoning skills and concepts. (MAT │CAR, SQR)

**MAT-123 Math for Carpenters 1**
This course is an examination of basic arithmetic, (adding, subtracting, multiplying, and dividing whole numbers, decimals and fractions) as well as percent formulas as it applies to the carpentry courses. This will also include costs, conversion of units, linear, square, cubic, and board measures. (MAT │CAR, SQR)

**MAT-201 College Algebra II and Trigonometry 3**
This course covers systems of equations, solutions to quadratic and higher degree equations, roots and radicals, and oblique triangles. (*Prerequisite*: MAT-101) (MAT │CAR, SQR)

**MAT-202 Pre-Calculus 3**
The course investigates fundamentals of plane analytical geometry, conic sections, complex numbers and polynomial, rational, exponential, logarithmic, and trigonometric functions. (*Prerequisite*: MAT-201) (MAT │CAR, SQR)

**MAT-205 Medicine and Mathematics 2**

The course is designed to help students with an interest in medicine learn how medications dosages are properly determined for a patient. This course can help students interested in medicine or health professions improve the skills needed for their future careers or goals. The course will explore concepts of drug dosing and calculations for the use of fractions, percentages, ratios, proportions and conversions as they relate to the medical world. Units within the apothecary and household systems will also be compared and issues with our interpretation of each system will be discussed. (*Prerequisite*: MAT-101) (MAT | CAR, SQR)

**MEC-103 Project Management 2**

This course introduces essential project management and problem-solving skills, focusing on the core principles required to effectively manage projects. Students will explore key tools for planning and executing projects, gaining practical experience through problem-solving exercises. Emphasis is placed on developing analytical thinking and creative problem-solving abilities, empowering students to tackle professional challenges with confidence. Through hands-on activities and simulated projects, students will enhance teamwork, communication, and leadership skills. Designed for students from various disciplines, this foundational course provides the essential knowledge and practical skills necessary for success in both future coursework and professional endeavors.

**MEC-151 Hand Fabrication 1**

This course covers standard hand and power tool fabrication technologies, safety practices, working concepts of hand tools, bandsaws, belt sanders, pedestal grinders, drill presses, and cutting tools. This course will also cover safety data sheets and material specifications. (*Co-requisite:* MEC-152)

**MEC-152 Hand Fabrication Lab 2**

This course covers the use of fabrication technologies, safety practices, working concepts of hand tools, bandsaws, belt sanders, pedestal grinders, drill presses, and cutting tools. It will serve to reinforce how various materials and fabrication techniques work together. (*Co-requisite:* MEC-151)

**MEC-155 Additive Manufacturing 1**

This course introduces the students to the design of 3D watertight meshes to create physical parts utilizing a 3D printer. Topics covered include the history of additive manufacturing, types of printing technologies, design for additive manufacturing, materials used, and corporate application of this process. Formerly AMT-255. (*Co-requisite:* MEC-156)

**MEC-156 Additive Manufacturing Lab 2**

This course instructs the students in the use of various software packages to design and create the code required to use a 3D printer. Software packages taught include Catalyst, Cura, TinkerCAD, SolidWorks, Fusion360, and Meshmixer. After creation of parts using the CAD software students then set up the part to be printed. When finished printing, students are then instructed in cleaning the part of support material and checking for accuracy and functionality. Formerly AMT-256. (*Prerequisite*: ART-127; *Co-requisite*: MEC-155)

**MEC-157 Sensors and Systems in Automation 2**

This course will introduce the students to common types of detection sensors used in automation. The theory of operation, setup in control circuits and troubleshooting will also be covered. The course will also introduce the student to pneumatic and hydraulic systems used in the industrial setting for control of actuators and grippers in an automated system. (*Prerequisites*: EET-161, EET-162 or BTT-151, BTT-152; *Co-requisite:* MEC-158)

**MEC-158 Sensors and Systems in Automation Lab 1**

This course will introduce the students to common types of detection devices used in automation through hands-on experimentation. The student will set-up, operate and troubleshoot practical problems in a laboratory setting. The course will also introduce the student to pneumatic and hydraulic systems used in the industrial setting for control of actuators and grippers in an automated system. The student will work with hydraulic and pneumatic systems to deal with the concepts of setup and integration of these systems into the larger control scheme of an automated system. (*Prerequisites*: EET-161, EET-162 or BTT-151, BTT-152; *Co-requisite:* MEC-157)

**MEC-161 Microcontrollers & Applications 1**

This course introduces students to microcontrollers and the ways they are used in various environments. The course will focus on the who, what, when, where, and why of employing microcontrollers and various case studies of implementation. (*Co-requisite:* MEC-162)

**MEC-162 Microcontrollers & Applications Lab 2**

This course will cover various scenarios and implementation of microcontrollers. The students will be instructed in various components that include but are not limited to: LEDs, Photoresistors, DIP switches, potentiometers, Servos, DC Motors, and Stepper Motors. The students will be programming their builds and utilizing real-world scenarios that will be introduced to generate solutions. (*Co-requisite:* MEC-161)

**MEC-201 Applied Industrial Technology 2**

This course is intended to re-examine and emphasize specific skills and diagnostic techniques and apply them to principles and theories learned in previous courses. Students are expected to hone the specific skills to prepare them for entry-level positions upon graduation. (*Co-requisite:* MEC-202)

**MEC-202 Applied Industrial Technology Lab 1**

This course accompanies MEC-201 and is intended to re-examine and emphasize specific skills and diagnostic and testing techniques and apply them to principles and theories learned in previous courses. Students are expected to hone the specific skills to prepare them for entry-level positions upon graduation. (*Co-requisite*: MEC-201)

**MEC-243 Automation and Robotics I 2**

This course begins with a study of the terminology for automated and robotic systems. Then the students will work with the classifications, coordinate systems, and physical makeup of a robotic system. This course continues with an examination of the power systems, lifting capacities and applications for automation and robots. An investigation of sensors, vision, artificial intelligence, the principles and techniques involved in working with robotics. (*Co-requisites*: MEC-244, MEC-245, MEC-246)

**MEC-244 Automation and Robotics I Lab 2**

This course is designed to work in parallel with MEC-243. The student will work with a FANUC industrial robot and design programs to guide the robot through movement paths. An emphasis is placed on safety at all times. Projects will range from linear and circular motion to palletizing applications. (*Co-requisites*: MEC-243, MEC-245, MEC-246)

**MEC-245 Programmable Logic Controllers I 2**

This course is designed to introduce the student to modern programmable logic controllers based on ControlLogix and CompactLogix Programmable Automation Controllers (PACs). The student will investigate the specification, setup, configuration, programming, and implementation of the controller. The course then continues with an examination of the different types of hardware devices that are used in conjunction with PACs. An emphasis is placed on programming projects throughout the course. (*Co-requisite*: MEC-246)

**MEC-246 Programmable Logic Controllers I Lab 2**

The student will investigate the setup, configuration, programming, and implementation of the controllers through lab exercises designed to have the student build a system from beginning to end. As the student progresses through this course the experiments will progressively build toward real-world applications. (*Co-requisite*: MEC-245)

**MEC-251 Industry 4.0 1**

This course will cover the usage cases and implementation of Internet of Things (IoT) devices and digital fabrication technologies. The students will research applications/case studies, sensors, and data logging. They will also look at methods of evaluating, organizing, and storing the data collected. The intersection of IoT and digital fabrication will be discussed. (*Prerequisites*: MEC-155, MEC-156, MEC-161, MEC-162; *Co-requisite:* MEC-252)

**MEC-252 Industry 4.0 Lab 3**

This course will instruct students in the implementation, fabrication, and programming of Internet of Things (IoT) devices augmented and enabled with digital fabrication techniques. The students will use real-world applications/case studies to inform their design and use of sensors to generate information and data logs for evaluation. They will implement methods of evaluating, organizing, and storing the data collected. (*Prerequisites*: MEC-155, MEC-156, MEC-161, MEC-162; *Co-requisite:* MEC-151)

**MEC-253 Automation & Robotics 2 2**

This course continues the study of robotics and automated systems started in the first robotics course. The integration of the robot with other automated systems is investigated. Techniques for handshaking, task passing, and sequencing events will be studied. The student will design integration projects based on the criteria provided in the lecture. Safety concerns when dealing with integration projects will be emphasized throughout the course. (*Prerequisites:* MEC-243, MEC-244; *Co-requisites*: MEC-254, MEC-255, MEC-256)

**MEC-254 Automation & Robotics 2 Lab 2**

This course continues the study of robotics and automated systems started in the first robotics course through hands-on projects. The integration of the robot with other automated systems will be investigated. Techniques for handshaking, task passing, and sequencing events will be studied. The student will implement integration projects based on the criteria provided in the lab. Safety concerns when dealing with integration projects will be emphasized throughout the course. (*Prerequisites:* MEC-243, MEC-244; *Co-requisites*: MEC-253, MEC-255, MEC-256)

**MEC-255 Programmable Logic Controllers II 2**

This course continues the investigation into the modern programmable logic controllers (PLCs) using the CompactLogix Programmable Automation Controllers (PACs) and Human Machine Interfaces (HMIs). The student will use the PACs to work through exercises designed to implement control systems from beginning to end. This process will also have the student work through the setup, configuration, programming, and implementation of HMIs to provide an operator with a usable and well thought out touch screen to interact with a process under PAC control. (*Prerequisites:* MEC-245, MEC-246; *Co-requisites*: MEC-256, MEC-253, MEC-254)

**MEC-256 Programmable Logic Controllers II Lab 2**

This course is designed to continue the investigation into the modern programmable logic controllers (PLCs) through hands-on experiments using the CompactLogix Programmable Automation Controllers (PACs) and Human Machine Interfaces (HMIs). The student will use the PACs to work through exercises designed to implement control systems from beginning to end. This process will also have the student work through the setup, configuration, programming, and implementation of HMIs to provide an operator with a

usable and well thought out touch screen to interact with a process under PAC control. An emphasis is placed on programming projects throughout the course. (*Prerequisites:* MEC-245, MEC-246; *Co-requisite*s: MEC-255, MEC-253, MEC-254)

**MEC-257 Production & Assembly 2**

This course introduces students to the full production of an end user grade product from raw materials. The course will focus on the steps needed to produce a product that needs fabrication (parts and electronics), and assembly. The students will do research, cost evaluations, and analysis of both the final product and its lifecycle. (*Prerequisites*: MEC-251, MEC-252; *Co-requisite:* MEC-258)

**MEC-258 Production & Assembly Lab 3**

In this course, students will produce a small production run of an end user grade product. The course will focus on the design, fabrication, production, and assembly of a full manufacturing run of a single product. The students will decide on a product, iterate designs, test, evaluate, and fabricate the final product. (*Prerequisites*: MEC-251, MEC-252; *Co-requisite:* MEC-257)

**MEC-259 Capstone Project 1**

In this course, the students will work on research for an open-ended research project to advance the lab space. Projects will be cycled based on the group's interests. Elements from each of their previous courses will be used and needed to complete this course successfully. The objective of this course is to research the implementation of upgrades to the lab. (*Co-requisite:* MEC-260)

**MEC-260 Capstone Project Lab 3**

In this course, the students will work to implement research on an open-ended research project to advance the lab space. Projects will be cycled based on the group's interests. Elements from each of their previous courses will be used and needed to complete this course successfully. The objective of this course is to research upgrades to the lab. (*Co-requisite:* MEC-259)

**MTR-100 Medical Terminology 1**

This course is a survey of the terminology used routinely in the medical environment. It will begin with a learning of the common root words used in constructing medical terms and integrate commonly used medical acronyms and abbreviations. The information will be presented according to anatomical systems. The student will be responsible for knowing the written and auditory recognition of the terminology reviewed. (SCI)

**PHY-101 Introductory Physics 3**

This course broadly surveys fundamental ideas in basic physics. Students will examine the concepts of the scientific method and measurements, one-dimensional kinematics and dynamics, energy, matter, heat and temperature, waves, electromagnetism, light, and some ideas of modern physics. A conceptual approach will be taken, with concepts being supported by some algebraic calculations. (*Prerequisite*: MAT-101) (SCI │CAR, SQR)

**PHY-120 Physical Science 3**

This course is a survey course of several of the fundamental scientific principles of chemistry, material science, and physics. The course will integrate atomic structure, chemical reactions, molecular composition and properties of materials (including metals), material strength testing, and application of forces, energy, heat, and gases. Demonstrations and hands-on labs will be used to illustrate concepts related to lecture materials. (*Prerequisite*: MAT-100 or MAT-101 or MAT-105) (SCI │CAR, SQR)

**PHY-203 Statics & Strength of Materials 3**

This course provides an introduction to the field of statics – the branch of physics and engineering that keeps buildings and other structures from falling down. This course uses trigonometric relationships of forces and moments to analyze coplanar systems and trusses, exploring how structures withstand internal and external forces. This course also compares properties and strengths of various materials used in construction through the consideration of axial stress and strain. Additionally, moments of inertia, centroids, and beams may be considered. Formerly SCI-201. (*Co-requisite*: MAT-110) (SCI │CAR, SQR)

**PRG-101 Programming for the Enterprise 3**

This introductory programming course is required for Computer Information Technology students. Topics include introductory programming concepts, procedures, functions, and object-oriented programming design with implementation. This course involves problem solving-skills to assess cases and projects. The course focuses on Python language, Visual Basic, and Hypertext Markup Language (HTML) in a lab environment.

**PRG-103 C Sharp 3**

The introduction of JAVA is presented in this course so that students can design and develop dynamic object-oriented programming projects. Some of the topics include inheritance, decision structures, arrays, and creation of classes using data objects. The languages used to implement object-oriented contents are C# and C++. In addition, this course helps to demonstrate strategies and prepare models which can be used as a project foundation so that the use of advanced tools can be further applied to construct application software contents.

**PRG-205 Programming with Scripting Languages 3**

Scripting languages are introduced in this course to enhance design and development of web-based contents, including operational web sites. The course focuses on PHP programming with MySQL techniques in which students will work with constructing arrays, programming loops, specified condition statements, event modeling and producing web content. Students are required to design and develop a web site for the final project of the course. In addition, students will have to join a database environment to a web-based project to demonstrate scripting language capabilities, and successful functionality of data event handling.

**PSY-101 General Psychology 3**

This course introduces terms and concepts dealing with basic psychological research methods, human and animal behavior, life-span development, states of consciousness, learning, memory, intelligence, motivation, personality structure, stress and coping, behavior disorders, social pressures and cultures. Students are encouraged to apply critical thinking strategies through their participation in various discussions of psychological theories and concepts throughout this course. (SOC │CAR, VED)

**PSY-105 Industrial and Organizational Psychology 3**

This course is designed to introduce students to major areas relevant to the behavior of corporate culture from the time they enter the labor force until retirement. This course focuses both on understanding the psychological bases of work behavior and on the organizational practices used to create a good fit between people's characteristics and work's demands. The goal of this course is to understand how businesses can be designed so that both efficiency and the quality of employee life are improved. Topics will include the history of Industrial and Organizational psychology, job analysis, psychological assessments, personal decisions, training and development, organizational change, teamwork, motivation, job satisfaction, leadership, work-family balance, work stress and health. (HUM, SOC │CAR, VED)

**PTA-103 Introduction to Physical Therapy for the Physical Therapist Assistant 2**

This course introduces the student to the physical therapy profession. Topics include history of physical therapy, the variety of physical therapy practice settings, an introduction to the Guide to PT Practice, the Code of Ethics and Standards of Ethical Conduct for the PT/PTA, the laws and regulations that oversee the profession, an introduction to principles of teaching and learning as they apply to patient instruction, the PT/PTA relationship, the PTA/patient relationship, cultural competence, patient confidentiality, and Evidence Based Practice (EBP).

**PTA-151 Patient Care 2**

This course introduces students to the skills necessary to provide basic patient management during physical therapy interventions. Topics include assessing/monitoring vital signs, body mechanics, positioning and draping, bed mobility, transfer techniques, gait training, appropriate selection and use of assistive devices, wheelchair management, and documentation. (*Prerequisites:* ART-131, BIO-107, BIO-108, BIO-109, BIO-110, ENG-101, HUM-ELE, MAT-121, MTR-100, PSY-101, and SSS-101; *Co-requisite:* PTA-152)

**PTA-152 Patient Care Lab 1**

This lab course aligns with PTA-151 and focuses on the application and practice of the skills learned in PTA-151 with special attention to technique and safety. The focus is on general patient care skills required of a PTA, including, but not limited to: assessing/monitoring vital signs, body mechanics, positioning and draping, bed mobility, transfer techniques, gait training, appropriate selection and use of assistive devices, wheelchair management. (*Prerequisites:* ART-131, BIO-107, BIO-108, BIO-109, BIO-110, ENG-101, HUM-ELE, MAT-121, MTR-100, PSY-101, and SSS-101; *Co-requisite:* PTA-151)

**PTA-153 Physical Therapy Procedures 2**

This course introduces students to the therapeutic use of physical agents. Topics studied and applied include superficial heat, cryotherapy, ultrasound, diathermy, traction, electrical modalities, light therapy, biofeedback, and ultraviolet radiation. Students will be introduced to principles, indications, contraindications, precautions, and application techniques. (*Prerequisites:* ART-131, BIO-107, BIO-108, BIO-109, BIO-110, ENG-101, HUM ELE, MAT-121, MTR-100, PSY-101, and SSS-101; *Co-requisite:* PTA-154)

**PTA-154 Physical Therapy Procedures Lab 1**

This lab course aligns with PTA-153 and focuses on the application of the therapeutic physical agents with special attention to technique and safety. Students will be required to demonstrate competency on the application and judicial use of superficial heat, cryotherapy, ultrasound, diathermy, traction, electrical modalities, biofeedback, light therapy, and ultraviolet radiation. (*Prerequisites:* ART-131, BIO-107, BIO-108, BIO-109, BIO-110, ENG-101, HUM-ELE, MAT-121, MTR-100, PSY-101, and SSS-101; *Co-requisite:* PTA-153)

**PTA-155 Principles of Therapeutic Exercise 1**

This course introduces the PTA student to the fundamentals, techniques, and application of therapeutic exercise as it relates to understanding and implementing the plan of care developed by the physical therapist. Topics include principles of aerobic exercise, stretching, and improving muscle performance for the prevention, treatment, and management of injuries. (*Prerequisites:* ART-131, BIO-107, BIO-108, BIO-109, BIO-110, ENG-101, HUM-ELE, MAT-121, MTR-100, PSY-101, and SSS-101; *Co-requisite:* PTA-156)

**PTA-156 Principles of Therapeutic Exercise Lab 1**

This lab course aligns with PTA-155 and focuses on the implementation of therapeutic interventions commonly used in physical therapy clinics with special attention to technique and safety. The focus is on therapeutic interventions including but not limited to:

strengthening, stretching, aerobic exercise, PNF, NDT, motor learning, and functional activities. (*Prerequisites:* ART-131, BIO-107, BIO-108, BIO-109, BIO-110, ENG-101, HUM-ELE, MAT-121, MTR-100, PSY-101, and SSS-101; *Co-requisite:* PTA-155)

**PTA-221 Pathophysiology 2**

This course addresses the processes of inflammation and healing and disease processes relevant for the PTA student and practitioner. Topics include pathologies of the immune system, cardiovascular system, respiratory system, musculoskeletal system, neurological system, integumentary system, digestive system, urinary system, and reproductive system, in addition to topics related to neoplasms, the intensive care unit, and the geriatric patient. Students will discuss the medical and pharmaceutical management of these pathologies and the effect on the provision of physical therapy services. (*Prerequisites:* ART-131, BIO-107, BIO-108, BIO-109, BIO-110, ENG-101, HUM-ELE, MAT-121, MTR-100, PSY-101, and SSS-101)

**PTA-223 Applied Kinesiology 3**

This course provides an in-depth study of the musculoskeletal system and human movement through the lens of the physical sciences. Students will explore the fundamentals of human motion from anatomical, physiological, and biomechanical perspectives, with an emphasis on motor skill application. Special attention is given to analyzing muscle actions and applying biomechanical principles to functional human movement, including gait and postural analysis. This course prepares students to understand and assess movement patterns relevant to clinical practice. (*Prerequisites:* ART-131, BIO-107, BIO-108, BIO-109, BIO-110, ENG-101, HUM-ELE, MAT-121, MTR-100, PSY-101, SSS-101; *Co-requisite:* PTA-224)

**PTA-224 Applied Kinesiology Lab 1**

This lab course aligns with PTA-223 and focuses on the application of the biomechanical principles and muscle actions of each region to gait and postural analysis, manual muscle testing, and goniometry with attention to safety and technique. (*Prerequisites:* ART-131, BIO-107, BIO-108, BIO-109, BIO-110, ENG-101, HUM-ELE, MAT-121, MTR-100, PSY-101, and SSS-101; *Co-requisite:* PTA-223)

**PTA-255 Interventions in Musculoskeletal 3**

This course includes an exploration of pathology, prevention, and management of injuries and conditions associated with each region of the musculoskeletal system with a focus on the role of the physical therapist assistant in implementing a physical therapy plan of care. (*Prerequisites:* PTA-103, PTA-151, PTA-152, PTA-153, PTA-154, PTA-155, PTA-156, PTA-221, PTA-223, PTA-224; *Co-requisite:* PTA-256)

**PTA-256 Interventions in Musculoskeletal Lab 1**

This lab course aligns with PTA-255 and focuses on the integration and practice of previously learned material and new skills / techniques / interventions commonly used to treat pathologies of the musculoskeletal system with a focus on the role of the physical therapist assistant in implementing a physical therapy plan of care. (*Prerequisites:* PTA-103, PTA-151, PTA-152, PTA-153, PTA-154, PTA-155, PTA-156, PTA-221, PTA-223, PTA-224; *Co-requisite:* PTA-255)

**PTA-257 Interventions in Neurology 3**

This course is an introduction to neuro-rehabilitation for the PTA. Topics include but are not limited to normal movement development across the lifespan, motor control, motor learning, and neuroplasticity, along with an exploration of pathology and management of a variety of neurological disorders including but limited to CVA, spinal cord injury, traumatic brain injury, and degenerative neurological conditions. (*Prerequisites:* PTA-103, PTA-151, PTA-152, PTA-153, PTA-154, PTA-155, PTA-156, PTA-221, PTA-223, PTA-224; *Co-requisite:* PTA-258)

**PTA-258 Interventions in Neurology Lab 1**

This lab course aligns with PTA-257 and focuses on the integration of previously learned material and new skills/techniques into the comprehensive rehabilitation of selected neurological disorders with a focus on the role of the physical therapist assistant in implementing a physical therapy plan of care. (*Prerequisites:* PTA-103, PTA-151, PTA-152, PTA-153, PTA-154, PTA-155, PTA-156, PTA-221, PTA-223, PTA-224; *Co-requisite:* PTA-257)

**PTA-259 Topics in Rehabilitation 3**

This course will explore different topics in rehabilitation including cardio/pulmonary issues, diabetes, amputations, burns, prosthetics/orthotics, gender specific issues, and oncology. This course will provide the students with the opportunity to incorporate their knowledge of treatment procedures and techniques previously learned to specific populations in rehabilitation. (*Prerequisites:* PTA-103, PTA-151, PTA-152, PTA-153, PTA-154, PTA-155, PTA-156, PTA-221, PTA-223, PTA-224; *Co-requisite:* PTA-260)

**PTA-260 Topics in Rehabilitation Lab 1**

This lab course aligns with PTA-259 and focuses on the integration of previously learned material and new skills/techniques into the comprehensive rehabilitation of a variety of populations with a focus on the role of the physical therapist assistant in implementing a physical therapy plan of care. (*Prerequisites:* PTA-103, PTA-151, PTA-152, PTA-153, PTA-154, PTA-155, PTA-156, PTA-221, PTA-223, PTA-224; *Co-requisite:* PTA-259)

**PTA-270 Clinical Experience I 2**

This is the first of three clinical experiences. It is an integrated clinical experience that will take place during the students' fourth term in the PTA program. The focus is on the application of knowledge, skills and behaviors that the PTA student has learned during their didactic and practical classroom work. During this affiliation, students should become comfortable with basic patient care skills. Students will have the opportunity to gain proficiency in the skills they have learned in prerequisite courses, including functional training, application of physical agents, mechanical modalities, electrotherapeutic modalities, and subsequent data collection. Students will have the opportunity to participate in direct patient care under the direction and direct supervision of either a licensed physical therapist or a physical therapist and physical therapist assistant team assigned by the facility. (*Prerequisites:* PTA-103, PTA-151, PTA-152, PTA-153, PTA-154, PTA-155, PTA-156, PTA-221, PTA-223, PTA-224; *Corequisites:* PTA-255, PTA-256, PTA-257, PTA-258, PTA-259, and PTA-260)

**PTA-280 Clinical Experience II 5**

This is the second of three clinical experiences and takes place during the first six weeks of the students' fifth term in the PTA program. The focus is on the application of knowledge, skills and behaviors that the PTA student has learned during their didactic and practical classroom work. During the six weeks, students have the opportunity to participate in direct patient care under the direction and direct supervision of either a licensed physical therapist or a physical therapist and physical therapist assistant team assigned by the facility. At this point, students have completed all didactic coursework and should be able to apply those skills to real patient care. In addition to the basic patient care skills, students should be able to implement and progress treatment plans outlined by a physical therapist in a professional manner. (*Prerequisites:* PTA-255, PTA-256, PTA-257, PTA-258, PTA-259, PTA-260, PTA-270)

**PTA-290 Clinical Experience III 6**

This final clinical experience will take place after PTA-280 in the fifth term. The focus of this final clinical experience is to prepare the PTA student to function as an entry-level PTA. During the eight weeks, students have the opportunity to participate in direct patient care

under the direction and direct supervision of either a licensed physical therapist or a physical therapist and physical therapist assistant team assigned by the facility. Students have completed all didactic coursework and have completed 360 hours of clinical education experience. As in PTA-270 and PTA-280, students should be competent at all basic patient care skills, at following a physical therapist's plan of care and at progressing patients as appropriate. They should be independent with documentation and with working under the rules outlined by the APTA, the state, and the specific clinic. (*Prerequisite:* PTA-280)

**PTA-295 Professional Seminar 1**

This course will provide students with the tools necessary for professional development after graduation, including but not limited to resume writing and preparation for the NPTE for PTA's. (*Prerequisites:* PTA-255, PTA-256, PTA-257, PTA-258, PTA-259, PTA-260, PTA-270)

**RAD-151 Radiologic Positioning I 3**

This course introduces the student to basic terminology used in radiographic positioning. The curriculum provides a comprehensive study of theory and principles of basic positions of the upper and lower extremities, bony thorax, chest and abdomen. This course is designed to synthesize the information and exhibit the knowledge for criteria, centering, and positioning of anatomy to produce a diagnostic image. (*Co-requisite:* RAD-152)

**RAD-152 Radiologic Positioning I Lab 1**

This course introduces the student to the practical knowledge and application of positioning. The curriculum provides a comprehensive application of the principles of basic positions of the upper and lower extremities, bony thorax, chest and abdomen. It is designed to develop competency through laboratory practicum applications. Laboratory experiences utilize phantom apparatuses and an energized lab to complement the classroom portion of the course. (*Co-requisite:* RAD-151)

**RAD-153 Radiologic Exposures & Principles I 4**

This course is an introduction to the fundamental concepts and techniques relating to the production of x-rays. Emphasis is placed on the factors affecting an acceptable radiograph: contrast, receptor exposure, spatial resolution and all of the geometric properties associated with diagnostic imaging. This course has a laboratory experience utilizing model apparatus in an energized lab which allows the students to apply the concepts acquired in the classroom environment.

**RAD-155 Patient Care I 2**

This course will provide a comprehensive study of basic concepts regarding patient care. The student will study proper body mechanics, transfer techniques, medical asepsis, communication skills with patients and co-workers, how to measure vital signs, how to deal with medical emergencies, and isolation techniques. It progresses into theory and advanced application of the clinical concepts of patient care and medical techniques in the radiology department.

**RAD-157 Radiologic Positioning II 2**

This course is a continuation of RAD-151. The course is designed to develop competency in diagnostic procedures of the vertebral column, cranium, gastrointestinal system, biliary tract, and urinary system. (*Prerequisites:* RAD-151, RAD-152, RAD-153, RAD-155; *Co-requisite:* RAD-158)

**RAD-158 Radiologic Positioning II Lab 1**

This course is a continuation of RAD-151 and RAD-152. The course is designed to develop competency in diagnostic procedures of the vertebral column, cranium, gastrointestinal system, biliary tract, and urinary system. Competence will be demonstrated on a weekly basis in a laboratory setting. Further practice will come in the actual clinical setting under

the guidance of an assigned registered clinical radiographer. (*Prerequisites:* RAD-151, RAD-152, RAD-153, RAD-155; *Co-requisite:* RAD-157)

**RAD-159 Radiologic Exposures & Principles II 3**

A continuation of RAD-153, this course is designed to acquaint students with the comprehensive analysis of the factors affecting image quality requiring integration of all exposure and technical factors previously learned. The student will learn the components, principles and operation of fluoroscopy, mobile and digital radiology imaging systems, and the factors that impact image acquisition, display, and retrieval in radiology. The details of Quality Assurance, Quality Management, and Quality Control will also be reviewed in this course. (*Prerequisites:* RAD-153)

**RAD-161 Patient Care II 2**

This course will discuss the use of pharmacodynamics and drug classifications; it focuses on radiopaque contrast media used in imaging procedures. Pharmacokinetics coverage describes how drugs are absorbed, metabolized, distributed, and eliminated. The second half of the course will review today's health care and hospital environment, proper documentation, accrediting bodies, and the professional ethics guiding the health worker today. Professionalism and legal implications will also be discussed. This course will also include legal doctrines and patient consent forms. (*Prerequisite:* RAD-155)

**RAD-163 Clinical Practicum I 2**

An introduction to the clinical radiographic experience which applies radiographic theory and provides learning experiences to help the student acquire expertise and proficiency in a variety of diagnostic radiographic procedures at specified levels of competency. Students will work on various radiographic equipment, and show competency in anatomy and physiology and radiographic positioning. Additionally, students will integrate knowledge of patient care and medical ethics as they apply critical thinking skills to daily radiographic practice. Students will spend a minimum of 15 hours per week in the clinical environment. Students must have verification of current CPR certification, annual health examination, immunizations, and all current clearances required by Johnson College. Students are responsible for their own expenses for travel to an assigned clinical site, which may be up to 90 miles from the campus. (*Prerequisites:* RAD-151, RAD-152, RAD-153, RAD-155)

**RAD-165 Clinical Practicum II 4**

A continuation of the clinical radiography experience which applies radiographic theory and provides learning experiences to help the student acquire expertise and proficiency in a variety of diagnostic radiographic procedures at specified levels of competency. Students will display basic radiation protection standards, become familiar with various radiographic equipment, and show competency in anatomy and physiology as well as radiographic positioning. Additionally, students will develop critical thinking skills and integrate knowledge of medical ethics and patient care into daily radiographic practice. Students will spend a minimum of 40 hours in the clinical environment per week, which will include one weekend shift. Students must have verification of current CPR certification, annual health examination, immunizations, and all current clearances required by Johnson College. (*Prerequisites:* RAD-157, RAD-158, RAD-159, RAD-161, RAD-163)

**RAD-251 Clinical Practicum III 2**

A continuation of the clinical radiography experience which applies radiographic theory and provides learning experiences to help the student acquire expertise and proficiency in a variety of diagnostic radiographic procedures at specified levels of competency. Students will work on various radiographic equipment, and show competency in anatomy and physiology and radiographic positioning. Additionally, students will develop critical thinking skills and integrate knowledge of medical ethics and patient care into daily radiographic practice. Students will spend a minimum of 16 hours per week in the clinical environment. Students must have verification of current CPR certification, annual health

examination, immunizations, and all current clearances required by Johnson College. (*Prerequisite:* RAD-165)

**RAD- 253 Radiation Biology & Protection 3**

This course describes the effects of ionizing radiation on cells in the human body and the effects of x-ray radiation on biological tissue. Radiation protection, monitoring, and dose limits will be reviewed in this course with an emphasis on the ALARA concept. The course will also review and define the roles of the regulatory agencies and their involvement in radiation protection. (*Prerequisites:* RAD-159, RAD-161)

**RAD-255 Image Analysis 2**

This course is designed to provide students with a basis for analyzing radiographic images for diagnostic purposes. Students will become acquainted with the importance of minimum imaging standards, problem solving techniques for image evaluation and the factors that can affect the image quality. Students will be responsible for critiquing radiographs to decide whether they are diagnostically acceptable and assure consistency in the production of quality images. (*Prerequisites:* RAD-157, RAD-158, RAD-159)

**RAD-259 Clinical Practicum IV 3**

This clinical radiography experience applies radiographic theory and provides learning experiences to help the student acquire expertise and proficiency in a variety of diagnostic radiographic procedures at specified levels of competency. Students will work on various radiographic equipment, and show competency in anatomy and physiology and radiographic positioning. Additionally, students will develop critical thinking skills and integrate knowledge of medical ethics and patient care into daily radiographic practice. Students will spend a minimum of 24 hours per week in the clinical environment. During this final practicum, students will be offered an optional rotation through specialized modalities. Students must have verification of current CPR certification, annual health examination, immunizations, and all current clearances required by Johnson College. (*Prerequisite:* RAD-251)

**RAD- 261 Radiologic Pathology 2**

This course emphasizes human pathology on a gross anatomic level. Inflammatory, immunologic, infectious, traumatic and neoplastic processes will be emphasized. Specific diseases will be studied in further depth from an organ system approach. (*Prerequisites:* RAD-157, RAD-159)

**RAD- 263 Advanced Medical Imaging 2**

This course familiarizes the student with the different modalities within the field of radiology. The students will explore topics in specialized areas such as CT, MRI, Nuclear Medicine, Mammography, PET, Bone Densitometry, Ultrasound, and Radiation Oncology. The students will review cross sectional anatomy, trauma radiology, myelograms, arthrograms and pediatric imaging. (*Prerequisites:* BIO-109, BIO-110, RAD-251)

**RAD- 295 Professional Seminar 2**

This course is established to assist the student in preparing for the registry examination given by the American Registry of Radiologic Technologists (ARRT). (*Prerequisite:* RAD-251, RAD-253, RAD-255) *Must pass competency examination with a minimum score of 76%.*

**SCI-120 Energy, the Environment, and Everyday Life 3**

This course will introduce students to energy and thermodynamics and explore various sources of the energy we consume daily, including fossil fuels, renewable energy, and nuclear energy. Attention will be given to the pros and cons of these different energy types, and consideration of environmental impacts will be made. This course will require students to examine scientific data and think critically about energy use, participate in class

discussions, and explore the impacts of energy on the local environment and culture. (HUM, SCI, SOC │CAR, VED)

**SCI-150 How It Works 3**

This course will familiarize students with some basic principles of physics through their applications to selected everyday phenomena and technology. Students will conduct experiments with everyday objects and toys to illustrate topics. Topics include kinematics (motion), mechanics (forces), thermodynamics (heat), and electromagnetism. In learning the basic physics responsible for ordinary occurrences, students will develop a deeper understanding of how the physical world works and gain a new appreciation of everyday phenomena that are ordinarily taken for granted. This course is designed for non-science students with an interest in the natural world. (SCI │CAR, SQR)

**SCI-160 Sustainability Design 3**

This course will explain what "sustainability" is, the construction materials and methods used in sustainability design, how it relates to building design, and how culture impacts these materials and methods. Students also will examine how energy usage, energy conservation, and sustainability concepts are applied to practical construction methods and details used in drafting and design. (HUM, SCI │CAR, SQR, VED)

**SOC-101 Introduction to Sociology 3**

Sociology is a way to understand the world. This course is designed to introduce students to the basic principles of sociological inquiry. It includes analysis of social structures and social behavior, including culture and socialization, social institutions, race, class, gender, deviance and social change. Students will be exposed to the basic theoretical and methodological approaches of the discipline. An introduction to sociology will assist students in developing an approach that will allow them to think about and evaluate social situations and issues, thus, acquiring the sociological perspective. (SOC │CAR, VED)

**SSS-101 First-Year Experience 1**

This course is designed to help first-year students transition to the college environment, reflect on their personal and academic goals, develop a better understanding of the learning process, and acquire essential skills for success in college and beyond. Topics include campus resources, academic and career planning, time management, personal finances, and current topics in health and wellness. Successful completion of SSS-101 is a graduation requirement for all 1- and 2-year students.

**VET-151 Intro. to Veterinary Technology / Clinical Management 1**

This course focuses on the duties and responsibilities of veterinary technicians/nurses as well as job opportunities in the field of veterinary technology. The human-animal bond and ethical issues are introduced to the student. This course provides students with the basic understanding of operations in a clinical setting in addition to office and managerial duties of technicians such as scheduling, ordering, inventory control, teamwork dynamics, and compassion fatigue. (HUM, VED)

**VET-153 Clinical Applications for Large Animals 2**

The focus of this course is to introduce students to large animals (horses, cattle, small ruminants). Students will learn about restraint and handling of large animals with an emphasis placed on safety. Course material will also include basic nursing care (medicating, physical exams, sample collections, as well as other routine procedures). Students will familiarize themselves with the large animal setting (farms/barns) in addition to tools and techniques found in large animal medicine. This course compliments VET-154, Large Animal Clinical Applications Lab. (*Co-requisite:* VET-154)

**VET-154 Clinical Applications for Large Animals Lab 1**

The focus of this course is to introduce students to large animals (horses and cattle). Students will learn how to safely restrain and handle large animals. Course material will also include basic nursing care (medicating, physical exams, sample collections, etc.). Students will familiarize themselves with the large animal setting (farms/barns) and various tools, equipment, and techniques used in large animal medicine. (*Co-requisite:* VET-153)

**VET-155 Clinical Applications for Small Animals 2**

This course will provide information on skills needed to work in a clinical setting. Emphasis will be on safety, handling & restraint techniques, general patient care and assessment, and medicating small animals. The course will also concentrate on husbandry and care of laboratory animals. *Companion animal and lab animal daily rotations are associated with this course requiring weekend and holiday animal rotations. Schedule will be provided.* This course compliments VET-156, Small Animal Clinical Applications Lab. (*Co-requisite:* VET-156)

**VET-156 Clinical Applications for Small Animals Lab 1**

This lab class allows students hands-on experience with various small animal species (*small rodents, rabbits, cats & dogs with availability*), including handling & restraint, administration of medication, and performing physical exams. Students must provide proof of prophylactic rabies inoculation and tetanus inoculation in order to participate in the lab. *Companion animal and lab animal daily rotations are associated with this course requiring weekend and holiday animal rotations. Schedule will be provided.* (*Co-requisite:* VET-155)

**VET-157 Animal Anatomy and Physiology I 3**

This course studies microscopic, cellular, and gross (macroscopic) animal anatomy and physiology that are likely to be encountered by the veterinary nurse, including: structure and function of cells, tissues, organs and organ systems. Topics emphasized include: directional terminology, introduction to basic chemical principles for life, cellular anatomy and physiology, and histology. Gross anatomy and physiology of the integument, skeletal system, muscular system, nervous system, and sense organs will be covered, emphasizing canine and feline bodies, while noting pertinent species' differences along the way. This course compliments VET-158, Animal Anatomy and Physiology Lab. (*Co-requisite:* VET-158)

**VET-158 Animal Anatomy and Physiology Lab I 1**

Topics covered in this course in a hands-on fashion include anatomic directions and terminology, chemical principles for life, cellular anatomy, cellular physiology, principles of histology, and organ systems. The systems covered here include the integument and related structures, the skeletal system, the muscular system, the nervous system, and special sense organs. Models and preserved specimens will be utilized, as well as a supplementary virtual anatomy tool. In addition, the student will be introduced to the proper use and care of a microscope. Personal protective equipment (PPE)/laboratory safety are covered. This course compliments and reinforces material presented in VET-157, Animal Anatomy and Physiology I. (*Co-requisite:* VET-157)

**VET-159 Animal Anatomy and Physiology II 3**

This course is a continued study of anatomical and physiological systems of animals that are likely to be encountered by the veterinary nurse. Emphasis is placed on the canine and feline bodies; however, some specific species' differences are noted along the way. Proper terminology is utilized to describe the major organs of each system, their locations, functions and pertinent histology. This course will cover the following systems: endocrine, blood, lymphatics, immunity and defense mechanisms, cardiovascular, respiratory, gastrointestinal (including dentition), urinary, and reproductive. This course compliments VET-160, Animal Anatomy and Physiology. (*Prerequisites*: VET-151, VET-157, VET-158; *Co-requisite:* VET-160)

**VET-160 Animal Anatomy and Physiology Lab II 1**

Topics covered in this course in a hands-on fashion include the following: endocrine system, blood, lymphatic system, immune system, cardiovascular system, respiratory system, gastrointestinal tract (including dentition), urinary tract, and reproductive tract. Models and preserved specimens will be utilized, as well as a supplementary virtual anatomy tool. Emphasis will be placed on feline and canine bodies, with pertinent species' differences noted along the way. This course compliments and reinforces material presented in VET-159, Animal Anatomy and Physiology II. (*Prerequisites*: VET-151, VET-157, VET-158; *Co-requisite:* VET-159)

**VET-161 Parasitology & Microbiology 2**

This course will provide a foundation of microbiology and parasitology for veterinary technicians. This course will cover characteristics of bacteria, fungi, viruses, and parasites, including emphasis on specific disease-causing organisms, diagnosis, treatment, and prevention. This course compliments VET-162, Parasitology & Microbiology Lab. (*Prerequisites*: VET-151, VET-157, VET-158; *Co-requisite:* VET-162)

**VET-162 Parasitology & Microbiology Lab 1**

This course involves identification of parasites, bacteria, viruses, and fungi common to veterinary medicine. Students will practice sample collection and preparation for parasitological and microbiological examination. Sample collection, handling, preparation & precautions are stressed. This course compliments VET-161, Parasitology & Microbiology. (*Prerequisites*: VET-151, VET-157, VET-158; *Co-requisite:* VET-161)

**VET-251 Pharmacology & Anesthesia 3**

This course is the study of the theory and application of pharmacology. Classifications of drugs and their usage, with specific information on mechanism of action, side effects, and dosing will be discussed. Students will be exposed to drug calculations and be expected to prepare and administer medications. This course covers dispensing medication and client instruction on how to give medications as well as educate clients on adverse reactions to medications. (*Prerequisites:* VET-151, VET-153, VET-154, VET-155, VET-156, VET-157, VET-158, VET-159, VET-161, CHM-101, CHM-102, MAT-205)

**VET-253 Clinical Pathology 2**

This course is designed to familiarize the student with diagnostic laboratory procedures commonly performed in the veterinary field. Discussions include clinical chemistry, veterinary hematology, urology and cytology. Sample collection and handling along with instrumentation and equipment maintenance is discussed. This course compliments VET 254, Clinical Pathology Lab. (*Prerequisites:* VET-151, VET-153, VET-154, VET-155, VET-156, VET-157, VET-158, VET-159, VET-160; *Co-requisite:* VET 254)

**VET-254 Clinical Pathology Lab 1**

This lab is designed to enhance and reinforce lectures and/or demonstrations by allowing students the opportunity to practice a variety of laboratory tests common to veterinary medicine. Students will perform hematological analyses, clinical chemistries, and urinalysis in addition to ear and skin cytology. (*Prerequisites:* VET-151, VET-153, VET-155, VET-157, VET-158, VET-159, VET-160; *Co-requisite:* VET-253)

**VET-259 Surgical Nursing I 2**

This course focuses on anesthesia principles and practices and standard surgical procedures. This course covers the role of a surgical technician in regards to preoperative procedures, aseptic technique, prepping, surgical assisting, and post-operative procedures, as well as client education/communication. This course utilizes a lab/lecture structure. (*Prerequisites*: VET-153, VET-154, VET-155, VET-156, VET-159, VET-160)

**VET- 263** **Surgical Nursing II** **2**

This course focuses on surgical procedures including: orthopedic, dental health and surgery, ovariohysterectomy, castration, as well as other common surgeries of both small and large animals. This course covers the role of the surgical technician in regards to identification of disease processes related to surgical procedure, surgical instrumentation needed, prepping, surgical assistance, and post-operative procedures, as well as postoperative client education/communication. The goal is to develop the veterinary nurse's decision-making ability throughout a multitude of surgical procedures utilizing ECG application and interpretation for patient monitoring and a variety of anesthetic protocols. The course places special emphasis on pain management, wound management, physical therapy and other nursing care duties and responsibilities of veterinary nurses. This course utilizes a lab/lecture structure. (*Prerequisite*: VET-259)

**VET-267** **Veterinary Radiology** **1**

This course is a study of radiological procedures for domestic animals common to veterinary medicine. It includes an overview of radiographic properties and equipment, restraint and positioning techniques, as well as exposing, developing and assessing radiographs. Record keeping and safety issues are discussed in addition to specialized radiographic studies. Students are provided hands-on opportunities to practice the techniques learned in class. This course compliments VET-268, Veterinary Radiology Lab. (*Prerequisites*: VET-151, VET-153, VET-154, VET-155, VET-156, VET-159, VET-160; *Co-requisites:* VET-268, VET-275)

**VET-268** **Veterinary Radiology Lab** **1**

This course provides a hands-on study of radiological procedures for domestic animals common to veterinary medicine. It encourages the practice of how to work with radiographic properties and equipment, restraint and positioning techniques, as well as exposing, developing and assessing radiographs. Appropriate record keeping and safety issues are reviewed in addition to specialized radiographic studies. Students are provided hands-on opportunities to practice the techniques learned in lecture. This course compliments VET-267, Veterinary Radiology Lab (*Prerequisites*: VET-151, VET-153, VET-154, VET-155, VET-156, VET-159, VET-160; *Co-requisites:* VET-267, VET-275)

**VET-269** **Intensive Care Applications** **3**

This course is a study of the nurse's role in emergency and intensive care. Students will study fluid therapy, blood transfusion, CPR and other procedures associated with emergency and critical care protocols. Students will be required to complete an online CPR certification. This course may also include 8 hours of exposure to emergencies in an emergency facility. (*Prerequisites*: VET-151, VET-153, VET-154, VET-155, VET-156, VET-159, VET-160, VET-161, VET-162, VET-253, VET 254, VET-259)

**VET-271** **Diseases and Zoonoses** **3**

This course is primarily the study of diseases (infectious, contagious, zoonotic, inflammatory, and organ system) and toxicology. Species studied include canine/feline, bovine/equine, porcine, small ruminant and select exotic species such as birds, ferrets, rabbits and reptiles. Topics such as the etiology, clinical signs, diagnostic tools, prevention techniques, treatments and public health issues for particular diseases are presented. A study of vaccine protocols for each species is also included where applicable. (*Prerequisites*: VET-151, VET-153, VET-154, VET-155, VET-156, VET-157, VET-158, VET-159, VET-160, VET-161, VET-162, VET-251)

**VET-275** **Clinical Rotation - Surgery** **3**

Each student will be assigned to specific areas within the Animal Care Center. Areas will include treatment, lab, kennel, and surgery, as well as other areas within the facility. Students will work alongside a licensed technician to hone skills learned in lecture and in labs. NOTE: successful completion of this course requires a 76% or better score on the

written final exam, oral/practical exam, and instructor evaluations of students. (*Prerequisites:* MAT-205, CHM-101, CHM-102, VET-151, VET-153, VET-154, VET-155, VET-156, VET-157, VET-158, VET-159, VET-160, VET-161, VET-162; *Co-requisites:* VET-267, VET-268, VET-280 or VET-282)

**VET-277 Clinical Rotation - Medicine 3**

Each student will be assigned to specific areas within the Johnson College Animal Care Center. Areas will include radiology, lab, kennel, reception, pharmacy, and examination rooms, as well as other areas within the facility. Students will work alongside a licensed technician to hone skills learned in lecture and in labs. NOTE: successful completion of this course requires a 76% or better score on the written final exam, oral/practical exam, and instructor evaluations of students. (*Prerequisites:* MAT-205, CHM-101, CHM-102, VET-151, VET-153, VET-154, VET-155, VET-156, VET-157, VET-158, VET-159, VET-160, VET-161, VET-162*; Co-requisite:* VET-280 or VET-282)

**VET-280 Kennel Rotation I 1**

This course focuses on preventive medicine and husbandry of canine and feline species. Topics covered include husbandry, applied anatomy, physical exams, applied parasitology, vaccine protocols, and preventive care. Emphasis is placed on individualizing patient care for surgical pre-op & post-op patients. *Kennel rotations are associated with this course requiring weekday and weekend rotation times*. (*Prerequisites*: VET-151, VET-155, VET-156, VET-159, VET-160; *Co-requisite:* VET-275 or VET-277)

**VET-282 Kennel Rotation II 1**

This course focuses on preventive medicine and husbandry of canine and feline species. Topics covered include husbandry, applied anatomy, physical exams, applied parasitology, vaccine protocols, and preventive care. Emphasis is placed on individualizing patient care for medical and boarding patients. *Kennel rotations are associated with this course requiring weekday and weekend rotation times.* (*Prerequisites*: VET-151, VET-155, VET-156, VET-159, VET-160; *Co-requisite:* VET-275 or VET-277)

**VET-295 Professional Seminar 1**

This 1 credit course is a capstone of the Veterinary Nursing program. The course will focus on preparing the student to sit for the VTNE licensing exam by concentrating on material from the nine (9) practice domains on the exam. The course will also provide information and skills necessary to participate in the internship/co-op requirement and CV writing. Students will be challenged utilizing case-based scenarios and complete multiple VTNE style practice exams in preparation for the VTNE. Must be taken in the final term prior to internships. (*Prerequisites*: VET-251, VET-253, VET 254, VET-259, VET-280)

**VET-299 Internship 4**

This work experience is designed to expose the students to an actual clinical environment. Students go into a contracted facility after they have met all program requirements. The students are expected to adhere to all policies and regulations associated with their work-term facility. This work experience is intended to expound upon the students' knowledge, skill and aptitude as an entry-level nurse. Students will be expected to wear their Johnson College scrubs unless dictated by the contracted facility. (*Prerequisites:* VET-251, VET-253, VET 254, VET-259, VET-263, VET-267, VET-268, VET-269, VET-271, VET-275, VET-277, VET-280, VET-282, VET-295)

**VMR-151 Introduction to Diesel & Heavy Equipment Technology 2**

This course covers information on hand tools, machines, and equipment common to the vehicle maintenance field, general service procedures, lubricants, reference manuals, pre-delivery inspection of new and used vehicles, and preventive maintenance procedures. This course is designed to prepare students to work properly with all of the aforementioned topics along with building safe and thorough work habits. (TECH | IL, TC)

**VMR-161 Welding and Flame Cutting for Vehicles 1**

This course introduces the student to welding as it pertains to vehicle and equipment preventive maintenance and repair. The student will learn the necessary safety precautions pertaining to cutting and welding. Emphasis will be placed on maintenance tasks that technicians in the diesel and heavy equipment industries are required to perform. (*Co-requisite:* VMR-162)

**VMR-162 Welding and Flame Cutting for Vehicles Lab 2**

This course provides the student the opportunity to practice the skills learned in VMR-161. Students will apply the necessary safety precautions pertaining to cutting and welding with MIG and ARC welders and oxyacetylene combination torches. Emphasis will be placed on maintenance tasks that technicians in the diesel and heavy equipment industries are required to perform. (*Co-requisite:* VMR-161)

**VMR-251 HVAC Vehicle Systems 2**

This course covers information on the operation of heating and air conditioning as applied to today's cars and trucks. Students will learn the theory of air conditioning systems in passenger vehicles and light trucks, heavy-duty trucks, and trailer refrigeration systems. New learning experiences in the troubleshooting and servicing of these systems are provided. This course will prepare students to take the ASE technician certification test for HVAC systems. Students will receive Mobile Air Conditioning refrigerant recovery and handling, Act 609, certification in this course. (*Co-requisite:* VMR-252 or HET-252)

**VMR-252 HVAC Vehicle Systems Lab 1**

This lab covers competency tasks on the operation of heating and air conditioning systems. Students will utilize modern service equipment to perform competencies for recovering, recycling, and recharging refrigerants in HVAC systems. High priority tasks recommended by ASE (Automotive Service Excellence) are covered. (*Co-requisite:* VMR-251)

**WFT-234 Pipe Welding 4**

This course covers the practices and procedures used to weld pipe and piping systems. The GTAW, GMAW, and SMAW process procedures are covered as well as the tools, materials, and equipment unique to piping systems. (*Prerequisites*: WFT-251, WFT-253, WFT-254)

**WFT-251 Introduction to Weld Testing 1**

This course covers the various non-destructive and destructive methods used to test welds. Students will explore various methods for evaluating welds and determining their compliance with different AWS Codes. (*Prerequisites*: WTC-155, WTC-156, WTC-157, WTC-158)

**WFT-253 Pipe Welding I Uphill 1**

This course covers key terms, shop math, specific welding symbols, joint design, weld repairs, and weld discontinuities and defects associated with various pipe welding procedures. (*Prerequisites*: WTC-155, WTC-156, WTC-157, WTC-158; *Co-requisite:* WFT-254)

**WFT-254 Pipe Welding I Uphill Lab 4**

This covers the practices and procedures used to weld pipe and piping systems with the SMAW process. Cutting and fitting of pipe with specific tools will be covered. (*Prerequisites*: WTC-155, WTC-156, WTC-157, WTC-158; *Co-requisite:* WFT-253)

**WFT-257 Introduction to Fabrication 1**

This course covers specific phases of fabrication. Various weld codes will be reviewed. The process of drawing basic shop drawings will be demonstrated, and proper rigging

terminology and practices will be covered. (*Prerequisites*: WFT-251, WFT-253, WFT-254; *Co-requisite:* WFT-258)

**WFT-258 Introduction to Fabrication Lab 3**

This course covers the practices of implementing blueprints to metal fabrication. Students will fabricate various projects from simple to complex drawings. Welding processes from SMAW, GMAW, FCAW and GTAW will be used. Students will learn various techniques for squaring, tacking, and welding components used in the projects. (*Prerequisites*: WFT-251, WFT-253, WFT-254; *Co-requisite:* WFT-257)

**WTC-151 Shielded Metal Arc Welding 2**

This course is designed to teach the student the basic safety, principles, practices, and applications of SMAW. This course covers welding trade theory including safety, tool usage, equipment set up, and standard terms and definitions. Basic welding and cutting techniques in the flat, horizontal, vertical and overhead positions, tank safety, and welding safety will be taught. The course also covers basic metallurgy and how to identify weld problems and defects. This course will progress to the most advanced SMAW practices with concentration on vertical and overhead welding techniques conforming to the AWS structural welding code. Weld problems, corrections, and specific techniques will be covered in this course. *(Co-requisites:* ART-101, MAT-100, WTC-152*)*

**WTC-152 Shielded Metal Arc Welding Lab 4**

This course is designed to allow students to apply the theory and techniques taught in WTC-151 Shielded Metal Arc Welding. Students will practice basic safety, principles, practices, and applications of SMAW, basic welding and cutting techniques in various positions. Weld problems, corrections and specific techniques will also be practiced in this course. Students have the opportunity to complete the AWS D1.1 SMAW 3G test. (*Co-requisite*: WTC-151)

**WTC-153 Gas Metal and Flux Cored Arc Welding I 1**

This course is designed to teach the student the basic principles, practices, and applications of GMAW and FCAW. This course covers gas metal arc welding and flux cored arc welding in the flat and horizontal positions. Students will be given classroom theory and hands-on instruction in both processes. American Welding Society weld symbols will also be covered. *(Co-requisites:* ART-101, MAT-100, WTC-154)

**WTC-154 Gas Metal and Flux Cored Arc Welding I Lab 2**

This course is designed to allow students to apply the theory and techniques taught in WTC-153 Gas Metal and Flux Cored Arc Welding I. Students will practice basic safety, principles, practices, and applications of GMAW and FCAW in the flat and horizontal positions. Weld problems, corrections, and specific techniques will also be practiced in this course. (*Co-requisite*: WTC-153)

**WTC-155 Gas Metal and Flux Cored Arc Welding II 1**

This course covers the most advanced GMAW/FCAW practices. The concentration will be on vertical and overhead welding techniques conforming to the AWS structural welding code. Weld problems, corrections, and specific techniques will be covered in this course. (*Prerequisites:* WTC-151, WTC-152, WTC-153, WTC-154; *Co-requisite*: WTC-156)

**WTC-156 Gas Metal and Flux Cored Arc Welding II Lab 2**

This course is designed to allow students to apply the theory and techniques taught in WTC-155 Gas Metal and Flux Cored Arc Welding II. Students will practice basic safety, principles, practices, and applications of GMAW and FCAW in the vertical and overhead positions. Weld problems, corrections, and specific techniques will also be practiced in this course. (*Prerequisites:* WTC-151, WTC-152, WTC-153, WTC-154; *Co-requisite*: WTC-155)

**WTC-157 Gas Tungsten Arc Welding 2**

This course is designed to teach the student the basic safety, principles, practices, and applications of GTAW. This course covers GTAW welding theory including safety, tool usage, equipment set up and standard terms and definitions. Basic welding techniques using GTAW in the flat, horizontal, vertical, and overhead positions will be taught. The course also covers related metallurgy, and how to identify weld problems and defects when using this process. (*Prerequisites:* WTC-151, WTC-152, WTC-153, WTC-154; *Co-requisite*: WTC-158)

**WTC-158 Gas Tungsten Arc Welding Lab 4**

This course is designed to allow students to apply the theory and techniques taught in WTC-157 Gas Tungsten Arc Welding (GTAW). Students will practice basic safety, principles, practices, and applications of GTAW in the flat, horizontal, vertical, and overhead positions. Weld problems, corrections, and specific techniques will also be practiced in this course. (*Prerequisites:* WTC-151, WTC-152, WTC-153, WTC-154; *Co-requisite*: WTC-157)

**General Education KEY**

- Arts (ART)
- Critical analysis and reasoning (CAR)
- Humanities (HUM)
- Information literacy (IL)
- Mathematics (MAT)
- Oral and written communication (COM)
- Science & scientific and quantitative reasoning (SCI, SQR)
- Social sciences (SOC)
- Technology & technological competency (TECH, TC)
- Values, ethics, and diverse perspectives (VED)

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| **Kellyn Williams, Ph.D.**<br>Ph.D., Capella University<br>M.B.A., Goldey-Beacom College<br>B.A., Goldey-Beacom College | **Associate Vice President of Special Programs** |
| **Stephenie Vergnetti**<br>M.S., University of Scranton<br>B.S., Marywood University | **Vice President of Human Resources and Senior Advisor to the President** |

## Faculty

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|---|---|
| **Heather Bonker**<br>M.A., College of Charleston<br>B.A., Saint Vincent College<br>Post-Masters Certificate in Education, Capella University | **General Education, Program Director** |
| **James Burden**<br>B.S., Northern Arizona University<br>Mechanical Design Cert., Penn Foster | **Architectural Drafting & Design, Program Director, Division Chair, and Associate Director of Faculty** |
| **Todd Campbell**<br>A.S.T., Johnson College<br>Licensed General Contractor | **Carpentry & Cabinetmaking Technology, Program Director** |
| **Roxanne M. Caswell, R.T. (R) (M)**<br>M.Ed**.,** American College of Education<br>B.S., Misericordia University<br>A.A.S., Broome Community College<br>American Registry of Radiologic Technologists | **Radiologic Technology, Program Director** |
| **Mark Chappell**<br>A.S.T., Johnson College | **Technical Instructor** |
| **Matthew P. Cirba**<br>M.S., Wilkes University<br>B.S., Keystone College<br>A.S., Johnson College | **Computer Information Technology, Instructor** |
| **Roxanne M. Caswell, R.T. (R) (M)**<br>M.Ed**.,** American College of Education<br>B.S., Misericordia University<br>A.A.S., Broome Community College<br>American Registry of Radiologic Technologists | **Radiologic Technology, Program Director** |
| **Anthony Delucca**<br>A.A.S., Johnson College<br>Certified Welding Instructor/Educator (CWI/CWE)<br>Certificate, Welder Training and Testing Institute<br>Motorcycle Fabrication Certificate<br>AWS D1.1 Certified Welder | **Welding, Program Director** |
| **Jaclyn Douglass, R.T. (R) (MR)**<br>M.Ed**.,** American College of Education<br>B.S., Misericordia University<br>American Registry of Radiologic Technologists | **Radiologic Technology, Clinical Coordinator/Instructor** |
| **Jeremy Elenbaas**<br>Automotive and Diesel Equipment Technology Certified<br>Universal Technical Institute | **Automotive Technology, Instructor** |

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| **Richard P. Fornes**<br>B.S., SUNY Binghamton<br>A.S., Broome Community College<br>A.S.T., Johnson College | **Electronic Engineering Technology, Program Director and Division Chair** |
| **Douglas Giza** | **Building and Property Maintenance, Instructor** |
| **Cole Hastings Goldstein**<br>M.F.A., Maine College of Art<br>B.F.A., Kutztown University | **Mechatronics Technology, Program Director** |
| **Lawrence Hardic**<br>A.A.S., Johnson College | **Technical Instructor** |
| **Marc Harrison**<br>Aviation Maintenance/Airframe/Powerplant Certified | **Aviation Technology, Instructor** |
| **Kimberly A. Konopka, CVT**<br>B.S., Wilkes University<br>A.S., Johnson College | **Veterinary Nursing, Program Director and Division Chair** |
| **Michael Kuester**<br>A.A.S., Johnson College | **Electrical Construction, Instructor** |
| **Jamie Laubenstein, CVT**<br>A.S., Johnson College | **Veterinary Nursing, Instructor** |
| **Benjamin Lipperini**<br>B.A., Keystone College<br>Certified Welder, Johnson College | **Welding, Instructor** |
| **John McDonald**<br>A.A.S., Johnson College | **Technical Instructor** |
| **Amanda Melnyk, CVT**<br>A.S., Johnson College | **Veterinary Nursing, Instructor** |
| **Allan Miller**<br>A.S.T., Johnson College | **Biomedical Equipment Technology, Program Director** |
| **Nichole Nye**<br>A.A.S., Johnson College | **Technical Instructor** |
| **Joshua Perniciaro**<br>Certified Welder, Johnson College | **Welding, Instructor** |
| **Joseph J. Polinsky**<br>A.S., Pennsylvania State University | **Computer Information Technology, Program Director** |
| **Laura Romanovich**<br>M.S., University of New England<br>B.S., University of Scranton | **Science, Instructor** |

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| **James Schwartz**<br>A.A.S., PA College of Technology | **Welding, Instructor** |
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| **Walter Wood**<br>A.A.S., Johnson College | **Heating Ventilation & Air Conditioning Technology, Program Director & Division Chair** |

## Staff

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| **Josué Hernandez** | **Senior Maintenance Mechanic** |
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| **Samantha Lehman**<br>B.A., Hollins University | **Community Engagement Coordinator** |
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| **Diana Mannick**<br>M.S., University of Gdansk<br>B.S., University of Gdansk | **Recruitment Advisor** |
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