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**Automotive Technician Program**

**Course Curriculum**

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| **Semester 01**   (Tuition: $2,430  Books: $290-$380) | | |
| **Course #** | **Course Title** | **Credits** |
| 31-804-305 | Applied Mathematics | 2 |
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| Credits: 2 Lecture Hours: 54 Students compute with rational numbers. They make and convert various measurements. Students use formulas to solve problems. They compute dimensions of geometric shapes. Students use statistical tools to represent and analyze data. They analyze various financial situations. Students use basic right triangle trigonometry to solve problems. In each topic area, students solve application problems. | | |
| 32-404-310 | Auto Electrical I | 3 |
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| Credits: 3 Lecture Hours: 36 Lab Hours: 72 Students focus on developing the skills needed to diagnose, service, and repair electrical and electronic systems. Students learn the fundamental concepts of electrical systems and understand wiring schematics. Learners utilize basic and digital test equipment, and apply Ohm's Law to electrical circuit diagnosis. | | |
| 32-404-314 | Automotive Maintenance | 3 |
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| Credits: 3 Lecture Hours: 36 Lab Hours: 72 Students perform routine maintenance of the automobile including new and used car preparation, fluid checks and service, interior and exterior considerations, replacing filters and small parts, repairing tires, replacing belts, replacing wiper blades, and other repairs to maintain acceptable automobile performance. | | |
| 32-404-333 | Automotive Brakes | 4 |
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| Credits: 4 Lecture Hours: 36 Lab Hours: 108 Students service and repair brake system problems using knowledge of brake system operation. Students use proper service tools and equipment to perform safe and quality brake system repair including disc brakes, drum brakes, parking brakes, and the brake hydraulic system. Students diagnose antilock brake system problems and perform necessary repairs. | | |
| 32-404-334 | Automotive Service Fundamentals | 3 |
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| Credits: 3 Lecture Hours: 54 Lab Hours: 54 Students practice basic skills encountered as a technician servicing automobiles and light trucks including metal work; handtool, powertool, and fastener usage; measuring techniques, hoist operation, gasket/sealer application; and oxyacetylene and mig welding techniques. Students' skills are improved through practice in a safety conscious manner. Students examine employment opportunities, employer and customer expectations, and policies and procedures related to the operation of an auto service shop. | | |
|  |  | **15** |
| **Semester 02**   (Tuition: $2,430  Books: $170-$250) | | |
| **Course #** | **Course Title** | **Credits** |
| 32-404-311 | Auto Electrical II | 3 |
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| Credits: 3 Lecture Hours: 36 Lab Hours: 72 Students focus on developing the skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting, charging, lighting, and computer control systems. Students utilize advanced techniques to diagnose and repair circuit faults. Prerequisite: Auto Electrical I (32-404-310) Automotive Service Fundamentals (32-404-334) | | |
| 32-404-315 | Engine Repair | 5 |
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| Credits: 5 Lecture Hours: 36 Lab Hours: 144 Students apply information and skills in repairing automotive engines, including in-car repairs, removal and replacement of parts, and cylinder head rebuilding. Complete engine disassembly is discussed and performed. Prerequisite: Automotive Service Fundamentals (32-404-334) | | |
| 32-404-322 | Suspension & Steering | 5 |
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| Credits: 5 Lecture Hours: 36 Lab Hours: 144 Students learn the fundamental concepts of suspension geometry and will analyze, diagnose, and repair automotive suspension and steering systems. Learners diagnose driving and handling concerns caused by steering and suspension system problems and misalignment concerns. Students operate computerized alignment equipment to perform four-wheel alignments on automobiles and operate wheel balancing equipment. Prerequisite: Automotive Service Fundamentals (32-404-334) | | |
| 32-806-303 | Science of Mechanics | 2 |
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| Credits: 2 Lecture Hours: 54 Students compute work, power, acceleration, heat, pressure, and other physical quantities. They explore simple machines and their applications. Students apply those physical quantities to automotive and agricultural power situations. Prerequisites: Applied Mathematics (31-804-305) or Math-Occupational (30-804-313) and Occupational Math-Technical (31-804-315) with a "C" or higher | | |
|  |  | **15** |
| **Semester 03**   (Tuition: $300) | | |
| **Course #** | **Course Title** | **Credits** |
| 32-404-350 | Occupational Internship | 2 |
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| Credits: 2 Lecture Hours: 0 Occupational Hours: 144 Students apply technical theory & skills, by maintaining, diagnosing and repairing automobiles and light trucks. Students practice the necessary personal and professional skills essential to be successful as an Automotive Technician | | |
|  |  | **2** |
| **Semester 04**   (Tuition: $2,130  Books: $200-$320) | | |
| **Course #** | **Course Title** | **Credits** |
| 32-404-312 | Auto Electrical III | 3 |
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| Credits: 3 Lecture Hours: 36 Lab Hours: 72 Students focus on developing the skills needed to diagnose and repair automobile electrical accessories, including cruise control, windshield wipers, electric windows, electric door locks, instrumentation and power antennas. Students utilize test lights, digital test equipment and wiring schematics to employ a logical diagnostic procedure for determining electrical system problems. Prerequisite: Auto Electrical II (32-404-311) | | |
| 32-404-323 | Emission Control Systems | 2 |
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| Credits: 2 Lecture Hours: 18 Lab Hours: 54 Students diagnose and service emission control systems and perform exhaust gas analysis on automobiles and light trucks. Co-requisite: Auto Engine Performance (32-404-326) | | |
| 32-404-324 | Automotive Computer Control Systems | 4 |
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| Credits: 4 Lecture Hours: 36 Lab Hours: 108 Students apply related theory and diagnostic procedures, to properly service and repair computerized control systems found on the modern day automobile, utilizing various types of diagnostic test equipment. Co-requisite: Emission Control Systems (32-404-323) | | |
| 32-404-326 | Auto Engine Performance | 4 |
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| Credits: 4 Lecture Hours: 36 Lab Hours: 108 Students perform ignition and fuel system maintenance and diagnostic procedures using a variety of diagnostic tools and test equipment. Students apply engine operating principles to perform diagnostic procedures on systems related to engine performance and emission control. Corequisite: Auto Electrical III (32-404-312) | | |
|  |  | **13** |
| **Semester 05**   (Tuition: $2,430  Books: $290-$390) | | |
| **Course #** | **Course Title** | **Credits** |
| 31-801-310 | Workplace Communication | 2 |
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| Credits: 2 Lecture Hours: 36 Lab Hours: 18 Students apply oral, written, listening, and non-verbal skills to workplace situations. Students discover how to use communication as the key to solving workplace problems, resolving conflicts, working as members of a team, and effectively giving and receiving criticism. Students develop an understanding of diversity in the workplace, harassment issues, and the impact of substance abuse on the job. Prerequisites: Communication 1 (73-851-710), or An undeclared major student. | | |
| 32-404-321 | Automatic Transmissions | 5 |
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| Credits: 5 Lecture Hours: 36 Lab Hours: 144 Students diagnose, service, and repair automatic transmissions. Students practice safe and practical shop procedures through automatic transmission disassembly, cleaning, inspection, and reassembly. Prerequisites: Automotive Computer Control Systems (32-404-324) | | |
| 32-404-325 | Manual Drivetrains & Axles | 5 |
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| Credits: 5 Lecture Hours: 36 Lab Hours: 144 Students perform service, diagnostic and repair procedures on manual transmission/transaxles, drive axles, differentials and transfer cases Prerequisite: Automotive Service Fundamentals (32-404-334) | | |
| 32-404-332 | Heating and Air Conditioning | 3 |
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| Credits: 3 Lecture Hours: 36 Lab Hours: 72 Students service, repair, and maintain automotive air conditioning systems using knowledge of how the system operates. Students diagnose problems using the appropriate equipment. Students test systems for leaks, recycle and recharge refrigerant, and remove and replace system components. Prerequisites: Auto Electrical III (32-404-312) | | |
|  |  | **15** |
| **Total Credits: 60** | | |
| **Estimated Total Tuition: $9,720** | | |
| **Tools/Equipment: $1,750** (optional) | | |
| *Additional cost for uniforms.* | | |