

# AUTOMOTIVE TECHNOLOGY

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2009 – 2010

18 Months

Credits Required for Graduation: 72

Associate of Applied Science (A.A.S.) Degree

## Basic Qualifications

People with mechanical aptitudes, good finger dexterity, and the ability to work on a problem until it's solved may want to consider a career as an automotive technician.

Anyone who has enjoyed high school classes in basic electronics or auto mechanics and has adequate math and reading skills is likely to be successful in the Automotive Technology program at Lake Area Technical Institute.

## Expect to Get Under the Hood

The 18-month degree program uses a combination of classroom instruction and practical application to train students to do quality work and to operate modern diagnostic equipment. The clean, up-to-date 15,000 square-foot shop is filled with a variety of late-model cars. This program provides hands-on lab experience under the close supervision of the instructors. Time cards, a parts department, work orders, and a complete array of manuals add to the "real work" environment.

## On the Road to Success

Graduates leave here ready for entry-level positions at auto dealerships, independent garages, auto service centers, or fleet maintenance centers. With experience, many alumni have advanced to service manager positions, opened their own repair shops, or used their mechanical skills to become key employees in manufacturing settings.

## Recommended Background Courses

Although not required, the following courses would be beneficial to this course of study prior to attending Lake Area Technical Institute: Basic Electronics, Algebra, Science, Vocational Auto, Computer, Physics, Communications, Math.

## COURSE DESCRIPTIONS

**AED 100 – Automated External Defibrillator (.5 credit)** To prepare individuals in the workplace to provide care for breathing emergencies, perform cardiopulmonary resuscitation (CPR), and use an automated external defibrillator (AED) for victims of sudden cardiac arrest.

**AT 100 – Safety (.5 credit)** Safety practices in the lab.

**AT 107 – Brake Systems Theory (3 credits)** Operation of the complete braking system to include ABS.

**AT 108 – Brake Systems Lab (4 credits)** Diagnosis and repair of braking problems including ABS.

**AT 119 – Alignment, Suspension, Steering, Axle Theory (3 credits)** Function and operation of all four of these systems.

**AT 122 – Alignment, Suspension, Steering, Axle Lab (4.5 credits)** Diagnosis and repair of the suspension, steering, axle systems and alignment of the vehicle.

**AT 146 – Heating and Air Conditioning Theory (2 credits)** Heating and air conditioning system operation and service procedures. Identification and handling of different refrigerants.

**AT 148 – Heating and Air Conditioning Lab (3 credits)** Heating and air conditioning system diagnosis, repair, and service procedures.

**AT 155 – Electrical/Electronic Systems Theory (3.5 credits)** Reading wiring diagrams and determining diagnostic procedures for automotive electrical systems.

**AT 156 – Electrical/Electronic Systems Lab (6 credits)** Diagnosis and repair of automotive electrical systems.

**AT 201 – Manual Drive Train/Transaxles Theory (2 credits)** Diagnosis and repair of manual transmission/transaxle, four-wheel drive transfer case and clutch systems.

**AT 208 – Manual Drive Train/Transaxles Lab (3 credits)** Application of AT 201.

**AT 212 – Automatic Transmissions/Transaxles Theory (2 credits)** Service and external adjustments of automatic transmissions/transaxles.

**AT 217 – Automatic Transmissions/Transaxles Lab (3 credits)** Automatic transmission/transaxle operation and diagnosis. Repair and rebuilding.

**AT 221 – Engine Repair Theory (2 credits)** Engine construction and theory of operation, diagnosis of failures, and proper repairs.

**AT 225 – Engine Rebuilding Lab (3 credits)** Application of AT 221.

**AT 259 – Engine Performance Theory (4 credits)** Operation of electronic fuel injection and its related systems.

**AT 263 – Engine Performance Lab (8 credits)** Diagnosis and repair of driveability concerns.

■ **CIS 102 – Windows Applications for Technicians (3 credits)** Using a Windows-based microcomputer and related software, you will gain an understanding and basic operational knowledge about the Windows XP operating system, Microsoft Office word processing, and spreadsheets, presentation software, and publishing software. You will demonstrate this knowledge by scoring at least 80% on assignments, related objective, and performance tests.

**COMM 101 – Contemporary Communications (3 credits)** Emphasis on the essentials of written and oral communication; also included in a unit on effective communication in the job search process.

• **ECON 105 – Economic Geography (3 credits)** The study of traditional theories of leadership, as well as, the most recently developed leadership philosophies. This course will focus on the application of leadership concepts through critical thinking and the development of critical leadership skills needed in the global workplace. Leadership traits, ethics, changing demographics, workforce diversity, and financial planning are also included.

• **MATH 100 – Applied General Math (3 credits)** Emphasis on the ability to understand and apply math skills to solve problems in the world of work.

• **PSYC 100 – Psychology of Human Relations (3 credits)** This course is designed to help a student recognize the importance of adjusting and getting along as a member of a working team. It will examine the role personality plays in the work environment and the personal qualities, interpersonal skills and values that employers are looking for.

■ **Students who transfer in two credits in computer science will take CSC 101 – Computer Essentials for 1 credit.**

**To fulfill graduation requirements, students must select one course in each of the four areas listed. Courses marked with an asterisk can be transferred directly to the university system under the terms of articulation agreements.**

#### **Behavioral Science**

PSYC 100 – Psychology of Human Relations  
PSYC 101 – General Psychology \*

#### **Communications**

SPCM 101 – Fundamentals of Speech \*  
ENGL 101 – Composition \*  
COMM 101 – Contemporary Communication

#### **Mathematics**

MATH 100 – Applied General Math  
MATH 101 – Intermediate Algebra  
MATH 102 – College Algebra \*

#### **Social Science**

ECON 105 – Leadership in the Global Workplace  
ECON 201 – Principles of Microeconomics I \*  
ECON 202 – Principles of Macroeconomics II \*  
SOC 100 – Introduction to Sociology \*