

# AUTOMOBILE TECHNOLOGY DEPARTMENT

**AUTO TECH BUILDING (323) 265-8726**

The Automobile Technology program at East Los Angeles College is NATEF (National Automotive Technician Education Foundation) certified. This program prepares students for a career in the high tech world of transportation repair. Los Angelinos value and depend on their cars, making the maintenance and repair industry a growth field, a trend that is predicted to continue for decades. All major domestic and import auto manufacturers are located in the area, and repair departments are a major component of their operations. Computerization has revolutionized automobile design, and mechanics need a comprehensive knowledge of all the systems of a vehicle to be successful in industry.

Students may enter the program with no prior experience and build their skills so they are able to diagnose and repair today's sophisticated automobiles. Faculty members are ASE (Automotive Service Excellence) certified Master technicians with many years of experience in private industry. The automobile technology facilities are second to none. Students use state-of-the-art tools and equipment. Hands-on laboratories combined with lectures that describe all the mechanical systems of modern cars and the latest computer-assisted repair and testing equipment prepare students to transition easily into automotive dealerships or independent repair shops.

To inquire about all phases of the program, call the Automobile Technology Department at (323) 265-8726.

## FACULTY

- Banuelos, Adrian - Chair  
*Associate Professor*
- Kangas, Walter  
*Associate Professor*

## EDUCATIONAL PROGRAMS

### SKILLS CERTIFICATES:

- **Automotive Customer Service Management**
- **Undercar Specialist**

### CERTIFICATES OF ACHIEVEMENT:

- **Automobile Technology**
- **Cooling Systems and Climate Control Specialist**
- **Drivetrain Specialist**
- **Engine Performance and Drivability**

### ASSOCIATE DEGREE PROGRAM:

- **Automobile Technology**

### SKILLS CERTIFICATES

#### AUTOMOTIVE CUSTOMER SERVICE MANAGEMENT

This skills certificate is designed to familiarize students with the theory and application of automotive technical systems and industry practices. Students will learn office and organizational skills necessary to deliver excellent customer service. Successful completion of this skills certificate will allow

students the opportunity to enter the auto industry as service writers and customer service managers.

SUBJECT & NO.	COURSE	UNITS
CAOT 48	Customer Service . . . . .	.3
CAOT 82	Microcomputer Software Survey in the Office . . . . .	.3
AUTOMO 101	Introduction to Automobile Technology	.4
AUTOMO 185	Directed Study- Automobile Technology	1
<i>Total.</i> . . . . .		<b>11</b>

#### UNDERCAR SPECIALIST

SUBJECT & NO.	COURSE	UNITS
AUTOMO 401	Suspension Steering, and Wheel Alignment . . . . .	.5
AUTOMO 501	Automobile Braking Systems. . . . .	.5
AUTOMO 601	Automobile Electrical/Electronic Systems . . . . .	.5
<i>Total.</i> . . . . .		<b>15</b>

### CERTIFICATES OF ACHIEVEMENT

#### AUTOMOBILE TECHNOLOGY

SUBJECT & NO.	COURSE	UNITS
AUTOMO 101	Introduction to Automobile Technology	.4
AUTOMO 111	Engine Repair and Rebuilding . . . . .	.4
AUTOMO 201*	Automatic Transmission and Transaxle	.5
AUTOMO 301*	Manual Drive Train Axles . . . . .	.5
AUTOMO 401*	Suspension, Steering and Wheel Alignment . . . . .	.5
AUTOMO 501*	Automobile Braking Systems. . . . .	.5
AUTOMO 601*	Automobile Electrical/Electronic Systems . . . . .	.5
AUTOMO 701*	Automobile Heating and Air Conditioning. . . . .	.5
AUTOMO 801*	Advanced Engine Performance. . . . .	.5

#### ELECTIVES: SELECT AT LEAST 2 UNITS FROM THIS LIST

AUTOMO 115	Automobile Repair Work Experience	.2
AUTOMO 185	Directed Studies . . . . .	.1
AUTOMO 285	Directed Studies . . . . .	.2
AUTOMO 385	Directed Studies . . . . .	.3
<i>Total.</i> . . . . .		<b>45</b>

\*This course has a corequisite.

#### COOLING SYSTEMS AND CLIMATE CONTROL SPECIALIST

SUBJECT & NO.	COURSE	UNITS
AUTOMO 111	Engine Repair and Rebuilding . . . . .	.4
AUTOMO 601	Automobile Electrical/Electronic Systems . . . . .	.5
AUTOMO 701	Automobile Heating and Air Conditioning. . . . .	.5
<i>Total.</i> . . . . .		<b>14</b>

#### DRIVETRAIN SPECIALIST

SUBJECT & NO.	COURSE	UNITS
AUTOMO 111	Engine Repair and Rebuilding . . . . .	.4
AUTOMO 201	Automatic Transmission and Transaxle	.5
AUTOMO 301	Manual Drive Train Axles . . . . .	.5
<i>Total.</i> . . . . .		<b>14</b>

**ENGINE PERFORMANCE AND DRIVABILITY**

SUBJECT & NO.	COURSE	UNITS
AUTOMO 111	Engine Repair and Rebuilding . . . . .	.4
AUTOMO 601	Automobile Electrical/Electronic Systems . . . . .	.5
AUTOMO 801	Advanced Engine Performance. . . . .	.5
<i>Total</i> . . . . .		<i>14</i>

**DEGREE PROGRAM**

**AUTOMOBILE TECHNOLOGY**

**Associate in Science Degree**

SUBJECT & NO.	COURSE	UNITS
AUTOMO 101	Introduction to Automobile Technology	.4
AUTOMO 111	Engine Repair and Rebuilding . . . . .	.4
AUTOMO 201*	Automatic Transmission and Transaxle	.5
AUTOMO 301*	Manual Drive Train Axles . . . . .	.5
AUTOMO 401*	Suspension, Steering and Wheel Alignment . . . . .	.5
AUTOMO 501*	Automobile Braking Systems. . . . .	.5
AUTOMO 601*	Automobile Electrical/Electronic Systems	5
AUTOMO 701*	Automobile Heating and Air Conditioning. . . . .	.5
AUTOMO 801*	Advanced Engine Performance. . . . .	.5

**ELECTIVES: SELECT AT LEAST 2 UNITS FROM THIS LIST**

AUTOMO 115	Automobile Repair Work Experience . . . . .	.2
AUTOMO 185	Directed Studies . . . . .	.1
AUTOMO 285	Directed Studies . . . . .	.2
AUTOMO 385	Directed Studies . . . . .	.3

**PROGRAM SUBTOTAL** **45**

**GENERAL EDUCATION REQUIREMENTS (PLAN B)** **18**

*Total* . . . . . **63**

\*This course has a corequisite.

**COURSE DESCRIPTIONS**

**AUTOMOBILE TECHNOLOGY (AUTOMO)**

**101 Introduction to Automobile Technology (4) CSU**

Lecture, 3 hours; Laboratory, 3 hours.

This course is designed for students who have little or no prior knowledge of automotive technology. Safety and tool use instruction prepares students for the theory and hands-on exploration of the automobile gas engine, brakes, suspension and steering, transmission, fuel injection, electrical and ignition and emission systems. Instruction utilizes the latest computerized equipment and state-of-the-art tools.

**111 Engine Repair and Rebuilding (4) CSU RPT2**

Lecture, 3 hours; Laboratory, 3 hours.

This course guides students through the diagnostic process and repair of automobile engines. Students will learn how to analyze an engine by performing a compression test, cylinder leakage test, and vacuum test. Students will also learn how to grind valves, service the pistons, cylinders, crankshaft, connecting rods, and block. This course provides the necessary skills and knowledge to pass the Automotive Service Excellence (ASE) Engine Repair examination.

**115 Automobile Repair Work Experience (2) CSU RPT3**

Laboratory, 6 hours.

This hands-on course is designed to allow students to expand their skills and educational experience in the field of automobile repair. Students will repair actual customer vehicles simulating real work experience at an automobile repair facility.

**201 Automatic Transmission and Transaxle (5) CSU RPT1**

Corequisite: Automobile Technology 101 or Automobile Technology 111.

Lecture, 4 hours; Laboratory, 3 hours.

This course presents the theory and skills needed to diagnose and repair automatic transmissions and transaxles. The course combines theory and hands-on instruction including: rear- and front-wheel drive transmission overhaul, torque converters, valve bodies, pressure testing, stall testing, electrical systems test and external adjustments.

**301 Manual Drive Train Axles (5) CSU RPT1**

Corequisite: Automobile Technology 101 or Automobile Technology 111.

Lecture, 4 hours; Laboratory, 3 hours.

This course presents the theory and skills needed to diagnose and repair manual transmissions, transaxles and driveline components. Topics include: clutches, drivelines, halfshafts, transmissions, differentials, transfer cases and related four-wheel drive systems. Theory and hands-on experiences will be utilized and at least one rear-wheel drive and one front-wheel drive transmission will be disassembled, inspected and reassembled.

**401 Suspension, Steering, and Wheel Alignment (5) CSU RPT1**

Corequisite: Automobile Technology 101 or Automobile Technology 111.

Lecture, 4 hours; Laboratory, 3 hours.

This course presents the theory and skills needed for diagnosis and repair of worn suspension components, steering components, driveshaft and drive axles, CV joints, and power steering components. Wheel alignment and wheel balancing on the latest computerized equipment is practiced. Upon successful completion of this course, students will have learned the theory and skills needed to pass the Automotive Service Excellence (ASE) examination.

**501 Automobile Braking Systems (5) CSU RPT1**

Corequisite: Automobile Technology 101 or Automobile Technology 111.

Lecture, 4 hours; Laboratory, 3 hours.

This course encompasses the theory, operation, inspection, repair and diagnosis of the modern automotive brake system. Extensive hands-on training includes replacing worn components, machining drums and rotors, bleeding and adjusting brakes, and the diagnosis and repair of anti-lock brakes. Upon successful completion of this course, students will have learned the theory and skills needed to pass the Automotive Service Excellence Brake examination.

**601 Automobile Electrical/Electronic Systems (5) CSU RPT1**

Corequisite: Automobile Technology 101 or Automobile Technology 111.

Lecture, 4 hours; Laboratory, 3 hours.

This course presents the theory and skills needed to diagnose, troubleshoot and repair automobile electrical, electronic and computer control systems. Topics include: electrical system principles, fundamentals of electronics, circuit diagrams, electrical and electronic test equipment, cranking and charging systems, lighting, motors, audio, sensors, Supplemental Restraint System (SRS), accessories, ignition, and computer-controlled actuators.