

# AUTOMOTIVE TECHNOLOGY (AUTOTEC)

## Automotive Technology (AUTOTEC) 101

### Intro To Automotive Techn

Lecture and laboratory course covering the operating principles of the modern automobile. Subjects will include Preventive maintenance of the cooling system service, fuel system, tires and wheels, lubrication system and accessories. Course will include career exploration and automotive academics. Writing assignments, as appropriate to the discipline, are part of the course.

*Eligibility for ENGLISH 101 based on prior coursework or CCCRTW, ACT, SAT, GED, or HiSET test scores, or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH, TR

## Automotive Technology (AUTOTEC) 102

### Introduction to Collision Technology

This course includes students to technical skills and competencies in the workplace for entry-level positions. In addition to technical training, students develop interpersonal and problem-solving skills that are required in the dynamic workplace of today. Writing assignments, as appropriate to the discipline, are part of the course.

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK

## Automotive Technology (AUTOTEC) 103

### Engine Concepts

Disassembly, inspection and service of automotive engines with major emphasis on operational diagnostic and service. students gain skills based on industry standards to perform precise diagnostics to solve operational issues related to the automotive engine. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better or Concurrent enrollment in AUTOTEC 101 or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH, TR

## Automotive Technology (AUTOTEC) 104

### Electrical Systems & Power Accessories

Introduction to theory, diagnosis, and repair of automotive electrical and electronic components and systems. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better or Concurrent enrollment in AUTOTEC 101 or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH, TR

## Automotive Technology (AUTOTEC) 105

### Fuel Management I

Service techniques and theories of operations necessary to maintain modern fuel delivery systems. Service will be performed on modern fuel injection systems. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in (AUTOTEC 103 or AUTOTEC 104), or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH

## Automotive Technology (AUTOTEC) 106

### Fuel Systems

This further study of the fuel system provides students with an opportunity to acquire knowledge of the construction, operating principles and components of automotive fuel systems. Students perform service on carburetors as well as fuel injection systems in accordance with established industry standards. Writing assignments, as appropriate of the discipline, are part of the course.

*Grade of C or better in (AUTOTEC 101 and AUTOTEC 104).*

9 Laboratory hours. 2 Lecture hours. 5 Credit Hours.

**Offered At:** KK, OH, TR

## Automotive Technology (AUTOTEC) 107

### Automotive Body Welding

Students will acquire knowledge and skills using MIG, TIG and spot welding equipment before welding operations in repairing damaged auto bodies. Proficiencies will be developed in butt and lap welding on light-gauge metal. Course will include replacement of body panels using adhesive techniques. All work performed must be in accordance with established collision industry standards. Writing assignments, as appropriate to the discipline, are part of the course.

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK

## Automotive Technology (AUTOTEC) 108

### Work Based Learning I

Introduction to applied automotive technology in an actual work setting. Provides hands-on experience in an automotive shop. Students work on actual vehicles, carrying jobs from assignment through completion. Business operators will supervise students at the worksite. Instructors will supervise all on-campus work, and also visit off-campus worksites to observe, monitor and critique student performance. Writing assignments, as appropriate to the discipline, are part of the course.

1-2 Lecture Hours. 10-20 Laboratory Hours. 3-6 Credit Hours.

**Offered At:** KK, OH, TR

## Automotive Technology (AUTOTEC) 109

### Automotive Brakes

Theory of operation and servicing of braking systems, both conventional and computerized anti-lock brake systems. Emphasis on diagnostic procedures; inspection techniques and service. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better or Concurrent enrollment in AUTOTEC 101 or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH, TR

## Automotive Technology (AUTOTEC) 111

### Auto Parts Specialist I

Lecture and Laboratory course covering the principles of selling automotive parts in retail and wholesale parts establishments. Subjects will include: customer relations, parts identification and usage, stockings control, products knowledge, telephone ethics, selling skills, and cataloging. Writing assignments, as appropriate to the discipline are part of the course.

9 Laboratory hours. 3 Lecture hours. 6 Credit Hours.

**Offered At:** KK

### **Automotive Technology (AUTOTEC) 112**

#### **Auto Parts Specialist II**

Lecture and Laboratory course covering skills necessary to manage an automotive parts retail store. Subjects will include customer relations, building team staff, inventory control, corporate relationships, conflict resolution, and business analysis. Writing assignment, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 111.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK

### **Automotive Technology (AUTOTEC) 117**

#### **Auto Body Reconstruction I**

Study of the principles and techniques of auto body sheet metal connections, use and care of basic tools, types and application of fillers, analysis of the extent of damage, and performance required repair operations. Students develop skills in repairing and/or removing and replacing damaged body panels. Emphasis is placed on developing proficiency in repairing body damage according to establish collision industry standards. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 107, or Consent of Department Chairperson.*

6 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

**Offered At:** KK

### **Automotive Technology (AUTOTEC) 118**

#### **Auto Body Repainting I**

Students will execute the techniques of preparing body surfaces, selecting and mixing paint, and spraying. Refinishing techniques will be performed on individual panels until each student demonstrates competency to refinish a live vehicle. Course will also emphasize recognizing and performing repair techniques for damage paint finishes in accordance with collision industry standards. Writing assignments, as appropriate to the discipline, are part of the course.

6 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

**Offered At:** KK

### **Automotive Technology (AUTOTEC) 119**

#### **Automotive Body Detailing**

Study of the principles of auto body detailing for post collision repaired vehicles and new and used car customer delivery service. Students will develop skills in selection and use of proper cleaning and polishing materials, proper buffing and polishing techniques, preparation of plastic bumpers and accessories, steam cleaning of engine components and care of rubber parts and interior cleaning. Writing assignments, as appropriate to the discipline, are part of the course.

9 Laboratory hours. 2 Lecture hours. 5 Credit Hours.

**Offered At:** KK

### **Automotive Technology (AUTOTEC) 121**

#### **Structural Analysis and Damage Repair I**

The development of skills in roughing and shaping procedures on automotive metal to make satisfactory minor body repairs. the emphasis is on the alignment of component parts such as doors, hoods, front-end assemblies and deck lids. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 102, 117, 217 or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK

### **Automotive Technology (AUTOTEC) 122**

#### **Structural Analysis and Damage Repair II**

Development of skills in manual and computer alignment with roughing and shaping procedures on automotive metal necessary to make satisfactory major body and unibody frame repairs. The emphasis is on the alignment of structural component parts such as, front-end assemblies, frame sections and body reconstruction. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 102, 117, 121, 217 or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK

### **Automotive Technology (AUTOTEC) 130**

#### **Topics in Alternative Fuel Technology**

This course will introduce the student to special topics in alternative fuel vehicles and all related technology. Additionally, the course will provide the knowledge base needed to understand alternative fuel vehicles, green technology, and their effect on the current and future of the world. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 101,104,105,204,205 and AUTOTEC 206; or Consent of Department Chairperson.*

3 Lecture hours. 3 Credit Hours.

**Offered At:** KK, OH

### **Automotive Technology (AUTOTEC) 204**

#### **Electrical Systems II**

This course is designed to provide the necessary knowledge and skills to service today's automotive electrical systems. Selected topics include the reading of wiring diagrams, diagnosing electrical accessories, and operating and designing ignition systems. Students learn circuit testing on today's modern multiplex and CAN/BUS system protocol. Course will emphasize proper handling of advanced solid-state electronics such as air bags and computers. Writing assignments as appropriate to the discipline are part of the course.

*Grade of C or better in (AUTOTEC 101 or AUTOTEC 104), or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH, TR

### **Automotive Technology (AUTOTEC) 205**

#### **Fuel Management II**

Emphasis on servicing of computerized engine and body controlled modules. Emphasis on service techniques for OBD II foreign and domestic computer control system. Students will gain skills in the use and interpretation of data related to modern diagnostic test equipment. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 105.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH

### **Automotive Technology (AUTOTEC) 206**

#### **Fuel Management III**

This course builds upon the knowledge gained in previous fuel management courses with emphasis on diagnosis and repairs to sensors and actuators that control engine performance. Students will gain advanced diagnostic skills to interpret waveform patterns through the use of laboratory scopes. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 205.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH

**Automotive Technology (AUTOTEC) 207****Transmission Transaxle & Dr**

This course will cover three, four, and five speed manual transmissions/transaxles and all automotive transmissions/transaxles used on front wheel drive passenger cars. Diagnosis and repair procedures will be covered in detail. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in (AUTOTEC 101 and AUTOTEC 212).*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH, TR

**Automotive Technology (AUTOTEC) 208****Work Based Learning II**

Advanced hands-on experience in an automotive shop. Students work on actual vehicles, carrying jobs from assignment through completion. Business operators will supervise students at the worksite. Instructors will supervise all on-campus work based learning students, and also visit off-campus worksites to observe, monitor, and critique student performance. Writing assignments, as appropriate to the discipline, are part of the course.

1-2 Lecture Hours. 10-20 Laboratory Hours. 3-6 Credit Hours.

**Offered At:** KK

**Automotive Technology (AUTOTEC) 209****Steering & Suspension Systems**

Theory of operation in servicing of suspension systems both rear and front wheel drive systems. Students gain skills in the use of computerized four-wheel alignment equipment, servicing McPherson struts, shock absorbers, rack and pinion and conventional steering systems. Diagnosis and service of Tire Monitoring Systems (TMS) is now part of the course. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better or Concurrent enrollment in AUTOTEC 101 or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH, TR

**Automotive Technology (AUTOTEC) 210****Performance & Driveability**

This course covers the construction, operations and testing of the ignition systems. Training is offered on the use of oscilloscopes, infrared gas analyzers, and other diagnostic equipment such as scan tool testing. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in (AUTOTEC 101, AUTOTEC 104, AUTOTEC 106 and AUTOTEC 204).*

9 Laboratory hours. 2 Lecture hours. 5 Credit Hours.

**Offered At:** KK, OH, TR

**Automotive Technology (AUTOTEC) 211****Auto Service Management**

Instruction in management skills related to inventory control, writing estimates and repair orders, billing, employee relations, time management, vendor relation, business financials and customer relations. Writing assignments, as appropriate to the discipline, are part of the course.

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH

**Automotive Technology (AUTOTEC) 212****Manual Drive Train & Axles**

Upon successful completion of this course students will demonstrate understanding of design, construction, operation and the service principles of automotive clutches, manual transmissions, drivelines, differentials, and rear axles. Service work includes using appropriate repair and test equipment, determining problems or extent of damage, and performing corrective work in accordance with established industry standards. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better or Concurrent enrollment in AUTOTEC 101 or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH, TR

**Automotive Technology (AUTOTEC) 215****AutoTemperature Control Systems**

Service procedures and theory of operation of both manual and electronically controlled heating and air conditioning systems. Emphasis will be on diagnosis, service, and replacement of air conditioning components. Writing assignments, as appropriate to the discipline, are part of the course.

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH, TR

**Automotive Technology (AUTOTEC) 217****Auto Body Reconstruction II**

Students will increase their knowledge and skills by repairing more complex, extensive damages. Removal and installation of trim, body panels, welding, aligning various body components of the body, repairing of body hardware and accessories. Repairing or replacement of mechanical components as required for complete reconstruction of the vehicle is emphasized in this course. Students will utilize estimating skills to estimate the extent of damaged, repair time and cost of repairs and repair strategies. All work will be performed in accordance with established collision industry standards. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 117.*

6 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

**Offered At:** KK

**Automotive Technology (AUTOTEC) 218****Auto Body Repainting II**

Students will build on their refinishing skills learned in Automotive Technology 118 course. Advanced refinishing techniques are emphasized through practical application of auto body refinishing techniques on live vehicles as well as panels. As refinishing skills increase in proficiency students will acquire skills to perform color matching to refinish weathered finishes and localized panel damage repairs. Students will be evaluated on their ability to complete refinishing assignments in accordance with industry standards. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 118.*

6 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

**Offered At:** KK

#### **Automotive Technology (AUTOTEC) 220**

##### **Collision Estimating**

Estimating for automotive insurance claims and adjusting damages. Emphasis will be on appraisal procedures, flat rate computations, use of collision estimator and preparation of insurance claim forms. Writing assignments, as appropriate to the discipline, are part of the course.

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK

#### **Automotive Technology (AUTOTEC) 223**

##### **Auto Body Repainting III**

This course introduces students to the theory and application of color in custom automotive paint jobs. Topics include color analysis, paint mixing and tint matching. Students may also receive instruction in primer choice and application, clear coat finishing and the equipment used to apply primer, paint and finisher. Instruction also covers refinishing techniques, such as the use of waterborne acrylic materials, color blending paint repair work and troubleshooting common auto painting problems. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 102, 118, 218 or Consent of Department Chairperson.*

6 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

**Offered At:** KK

#### **Automotive Technology (AUTOTEC) 230**

##### **Introduction to Alternative Fuel Technology**

This course will introduce the student to the theories and service techniques of alternative fuel vehicles in today's society. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 101,104,105,204,205, and AUTOTEC 206; or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH

#### **Automotive Technology (AUTOTEC) 231**

##### **AFT Hybrid Fuel Vehicles**

This course builds upon the knowledge gained in the previous alternative fuel courses with an emphasis on theories and servicing techniques of hybrids and fuel-cell vehicles. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 101,104,105,204,205 and AUTOTEC 206; or Consent of Department Chairperson.*

6 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** KK, OH

#### **Automotive Technology (AUTOTEC) 232**

##### **Hybrid and Fuel Cell Vehicles**

In this course, students will learn about alternative fuel technologies, apply advanced service techniques, and experiment with electric, hybrids, fuel-cell and other alternative energy source vehicles. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in AUTOTEC 101,104,105,204,205 and AUTOTEC 206; or Consent of Department Chairperson.*

9 Laboratory hours. 2 Lecture hours. 5 Credit Hours.

**Offered At:** KK, OH