

AUT Automotive

Course Information

**04/05/11**

*This course is active within the CCL.*

AUT-110\_2007FA                      Intro to Auto Technology                      AUT-110

CIS Course ID S21683

Effective Term Fall 2007

End Term

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course covers workplace safety, hazardous material and environmental regulations, use of hand tools, service information resources, basic concepts, systems, and terms of automotive technology. Topics include familiarization with vehicle systems along with identification and proper use of various automotive hand and power tools. Upon completion, students should be able to describe safety and environmental procedures, terms associated with automobiles, identify and use basic tools and shop equipment.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                      N/A

*This course is obsolete within the CCL.*

AUT-110\_1997SU                      Intro to Auto Technology                      AUT-110

CIS Course ID S13761

Effective Term Summer 1997

End Term                      Summer 2008

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course covers the basic concepts and terms of automotive technology, workplace safety, North Carolina state inspection, safety and environmental regulations, and use of service information resources. Topics include familiarization with components along with identification and proper use of various automotive hand and power tools. Upon completion, students should be able to describe terms associated with automobiles, identify and use basic tools and shop equipment, and conduct North Carolina safety/emissions inspections.

Minimum State                      None

Prerequisites  
Minimum State  
Corequisites                      None  
College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-111\_1997SU                      Basic Auto Technology                      AUT-111

CIS Course ID S13774

Effective Term Summer 1997

End Term              Summer 2008

Class 1 Lab 2 Clinical 0 Work 0 Credit 2

This course introduces basic concepts, terms, workplace safety, regulations, and service information relating to automotive technology. Emphasis is placed on developing familiarity with automotive components along with basic identification and proper use of various hand and power tools and shop equipment. Upon completion, students should be able to define and use terms associated with automobiles and identify and use basic tools and shop equipment.

Minimum State  
Prerequisites                      None

Minimum State  
Corequisites                      None

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-112\_1997SU                      Auto Shop Management                      AUT-112

CIS Course ID S13748

Effective Term Summer 1997

End Term              Summer 2008

Class 1 Lab 2 Clinical 0 Work 0 Credit 2

This course covers principles of management essential to decision making, communication, authority, and leadership. Topics include shop supervision, customer relations, cost effectiveness, and workplace ethics. Upon completion, students should be able to describe basic automotive shop operation from a management standpoint.

Minimum State  
Prerequisites                      None

Minimum State                      None

Corequisites

College Transfer

N/A

AUT-112 (Summer 1997) was archived and replaced by AUT-212 (Fall 2007) per CRC 09/20/06.

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*This course is active within the CCL.*

AUT-113\_2007FA

Automotive Servicing I

AUT-113

CIS Course ID S21684

Effective Term Fall 2007

End Term

Class 0 Lab 6 Clinical 0 Work 0 Credit 2

This course is a lab used as an alternative to co-op placement. Emphasis is placed on shop operations, troubleshooting, testing, adjusting, repairing, and replacing components using appropriate test equipment and service information. Upon completion, students should be able to perform a variety of automotive repairs using proper service procedures and to operate appropriate equipment.

Minimum State

None

Prerequisites

Minimum State

None

Corequisites

College Transfer

N/A

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*This course is obsolete within the CCL.*

AUT-113\_1997SU

Automotive Servicing

AUT-113

CIS Course ID S13777

Effective Term Summer 1997

End Term Summer 2008

Class 2 Lab 6 Clinical 0 Work 0 Credit 4

This course covers diagnostic procedures necessary to determine the nature and cause of auto service problems and the procedures used to repair/replace components. Emphasis is placed on troubleshooting, testing, adjusting, repairing, and replacing components using appropriate test equipment and service information. Upon completion, students should be able to perform a variety of automotive repairs using proper service procedures and operate appropriate equipment.

Minimum State

None

Prerequisites

Minimum State Corequisites	None
College Transfer	N/A

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*This course is active within the CCL.*

AUT-114_2007FA	Safety and Emissions	AUT-114
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CIS Course ID S21685

Effective Term Fall 2007

End Term

Class 1 Lab 2 Clinical 0 Work 0 Credit 2

This course covers the laws, procedures, and specifications needed to perform a North Carolina State Safety and Emissions inspection. Topics include brake, steering and suspension, lighting, horn, windshield wiper, tire, mirrors, and emission control devices inspection. Upon completion, students should be able to perform complete and thorough North Carolina State Safety and Emissions inspections.

Minimum State Prerequisites	None
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Minimum State Corequisites	None
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College Transfer	N/A
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*This course is active within the CCL.*

AUT-114A_2007FA	Safety and Emissions Lab	AUT-114A
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CIS Course ID S21686

Effective Term Fall 2007

End Term

Class 0 Lab 2 Clinical 0 Work 0 Credit 1

This course is an optional lab that allows students to enhance their understanding of North Carolina State Emissions Inspection failures. Topics include evaporative, positive crankcase ventilation, exhaust gas recirculation and exhaust emissions systems operation, including catalytic converter failure diagnosis. Upon completion, students should be able to employ diagnostic strategies to repair vehicle emissions failures resulting from North Carolina State Emissions inspection.

Minimum State Prerequisites	None
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Minimum State	Take AUT-114
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Corequisites

College Transfer

N/A

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*This course is obsolete within the CCL.*

AUT-115\_1997SU

Engine Fundamentals

AUT-115

CIS Course ID S13767

Effective Term Summer 1997

End Term Summer 2008

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers the theory, construction, inspection, diagnosis, and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis/repair of automotive engines using appropriate tools, equipment, procedures, and service information.

Minimum State

Prerequisites

None

Minimum State

Corequisites

None

College Transfer

N/A

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*This course is active within the CCL.*

AUT-116\_2007FA

Engine Repair

AUT-116

CIS Course ID S21687

Effective Term Fall 2007

End Term

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers the theory, construction, inspection, diagnosis, and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

Minimum State

Prerequisites

None

Minimum State

None

Corequisites

College Transfer

N/A

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*This course is obsolete within the CCL.*

AUT-116\_1997SU

Engine Repair

AUT-116

CIS Course ID S13754

Effective Term Summer 1997

End Term Summer 2008

Class 1 Lab 3 Clinical 0 Work 0 Credit 2

This course covers service/repair/rebuilding of block, head, and internal engine components. Topics include engine repair/reconditioning using service specifications. Upon completion, students should be able to rebuild/recondition an automobile engine to service specifications.

Minimum State

None

Prerequisites

Minimum State

None

Corequisites

College Transfer

N/A

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*This course is active within the CCL.*

AUT-116A\_2007FA

Engine Repair Lab

AUT-116A

CIS Course ID S21688

Effective Term Fall 2007

End Term

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

Minimum State

None

Prerequisites

Minimum State

Take AUT-116

Corequisites

College Transfer

N/A

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*This course is active within the CCL.*

AUT-123\_2007FA                      Powertrain Diagn & Serv                      AUT-123

CIS Course ID S21689

Effective Term Fall 2007

End Term

Class 1 Lab 3 Clinical 0 Work 0 Credit 2

This course covers the diagnosis, repair and service of the vehicle powertrain and related systems. Topics include fundamental operating principles of engines and transmissions and use of proper service procedures for diagnosis, service and removal and replacement of major components. Upon completion, students should be able to perform basic service and diagnosis of the powertrain and related systems, and to perform in vehicle repairs and remove and replace components.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-131\_1997SU                      Drive Trains                      AUT-131

CIS Course ID S14307

Effective Term Summer 1997

End Term                      Summer 2008

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course introduces principles of operation of basic automotive drive trains. Emphasis is placed on manual and automatic transmissions, transaxles, and final drive components. Upon completion, students should be able to describe, diagnose, and determine needed service and repairs.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-132\_2003SU

Drive Trains Lab

AUT-132

CIS Course ID S20331

Effective Term Summer 2003

End Term Summer 2008

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course provides a laboratory setting to enhance the skills for diagnosing and repairing automotive drive trains. Emphasis is placed on practical experiences that enhance the topics presented in AUT 131. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 131.

Minimum State Prerequisites None

Minimum State Corequisites Take AUT-131

College Transfer N/A

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*This course is active within the CCL.*

AUT-141\_2007FA

Suspension & Steering Sys

AUT-141

CIS Course ID S21690

Effective Term Fall 2007

End Term

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair steering and suspension components, check and adjust alignment angles, repair tires, and balance wheels.

Minimum State Prerequisites None

Minimum State Corequisites None

College Transfer N/A

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*This course is obsolete within the CCL.*

AUT-141\_1997SU

Suspension & Steering Sys

AUT-141

CIS Course ID S12831

Effective Term Summer 1997

End Term Summer 2008

Class 2 Lab 4 Clinical 0 Work 0 Credit 4

This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair various steering and suspension components, check and adjust various alignment angles, and balance wheels.

Minimum State Prerequisites None

Minimum State Corequisites None

College Transfer N/A

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*This course is active within the CCL.*

AUT-141A\_2007FA Suspension & Steering Lab AUT-141A

CIS Course ID S21691

Effective Term Fall 2007

End Term

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair steering and suspension components, check and adjust alignment angles, repair tires, and balance wheels.

Minimum State Prerequisites None

Minimum State Corequisites Take AUT-141

College Transfer N/A

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*This course is active within the CCL.*

AUT-151\_2007FA Brake Systems AUT-151

CIS Course ID S21692

Effective Term Fall 2007

End Term

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                                      N/A

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*This course is obsolete within the CCL.*

AUT-151\_1997SU                                      Brake Systems                                      AUT-151

CIS Course ID S13620

Effective Term Summer 1997

End Term                      Summer 2008

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                                      N/A

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*This course is active within the CCL.*

AUT-151A\_2007FA                                      Brakes Systems Lab                                      AUT-151A

CIS Course ID S21693

Effective Term Fall 2007

End Term

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include drum and disc brakes involving hydraulic, vacuum-boost, hydra-boost, electrically powered boost, and anti-lock, parking brake systems and emerging brake systems technologies. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

Minimum State Prerequisites	None
Minimum State Corequisites	Take AUT-151
College Transfer	N/A

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*This course is obsolete within the CCL.*

AUT-152_1997SU	Brake Systems Lab	AUT-152
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CIS Course ID S13590  
Effective Term Summer 1997  
End Term Summer 2008  
Class 0 Lab 2 Clinical 0 Work 0 Credit 1

This course provides a laboratory setting to enhance brake system skills. Emphasis is placed on practical experiences that enhance the topics presented in AUT 151. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 151.

Minimum State Prerequisites	None
Minimum State Corequisites	Take AUT-151
College Transfer	N/A

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*This course is active within the CCL.*

AUT-161_2007FA	Basic Auto Electricity	AUT-161
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CIS Course ID S21697  
Effective Term Fall 2007  
End Term  
Class 4 Lab 3 Clinical 0 Work 0 Credit 5

This course covers basic electrical theory, wiring diagrams, test equipment, and diagnosis, repair, and replacement of batteries, starters, and alternators. Topics include Ohm's Law, circuit construction, wiring diagrams, circuit testing, and basic troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair basic wiring,

battery, starting, charging, and electrical concerns.

Minimum State Prerequisites           None

Minimum State Corequisites           None

College Transfer                   N/A

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*This course is obsolete within the CCL.*

AUT-161\_1997SU                   Electrical Systems                   AUT-161

CIS Course ID S11924

Effective Term Summer 1997

End Term       Summer 2008

Class 2 Lab 6 Clinical 0 Work 0 Credit 4

This course covers basic electrical theory and wiring diagrams, test equipment, and diagnosis/repair/replacement of batteries, starters, alternators, and basic electrical accessories. Topics include diagnosis and repair of battery, starting, charging, lighting, and basic accessory systems problems. Upon completion, students should be able to diagnose, test, and repair the basic electrical components of an automobile.

Minimum State Prerequisites           None

Minimum State Corequisites           None

College Transfer                   N/A

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*This course is obsolete within the CCL.*

AUT-162\_1997SU                   Chassis Elect & Electronics                   AUT-162

CIS Course ID S11837

Effective Term Summer 1997

End Term       Summer 2008

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course covers electrical/electronic diagnosis/repair, including wiring diagrams, instrumentation, and electronic/computer- controlled devices and accessories. Topics include interpreting wiring diagrams and diagnosis and repair of chassis electrical and electronic systems. Upon completion, students should be able to read and interpret wiring diagrams and determine/perform needed repairs on chassis electrical and electronic systems.

Minimum State Prerequisites	None
Minimum State Corequisites	None
College Transfer	N/A

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*This course is active within the CCL.*

AUT-163\_2007FA                      Adv Auto Electricity                      AUT-163

CIS Course ID S21698

Effective Term Fall 2007

End Term

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers electronic theory, wiring diagrams, test equipment, and diagnosis, repair, and replacement of electronics, lighting, gauges, horn, wiper, accessories, and body modules. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, and troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns.

Minimum State Prerequisites	Take AUT-161
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Minimum State Corequisites	None
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College Transfer	N/A
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*This course is obsolete within the CCL.*

AUT-163\_1997SU                      Chassis Elec & Elect Lab                      AUT-163

CIS Course ID S11894

Effective Term Summer 1997

End Term              Summer 2008

Class 0 Lab 2 Clinical 0 Work 0 Credit 1

This course provides a laboratory setting to enhance chassis electrical and electronic system skills. Emphasis is placed on practical experiences that enhance the topics presented in AUT 162. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 162.

Minimum State Prerequisites	None
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Minimum State  
Corequisites Take AUT-162

College Transfer N/A

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*This course is active within the CCL.*

AUT-163A\_2007FA Adv Auto Electricity Lab AUT-163A

CIS Course ID S21699

Effective Term Fall 2007

End Term

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, troubleshooting and emerging electrical/electronic systems technologies. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns.

Minimum State  
Prerequisites None

Minimum State  
Corequisites Take AUT-163

College Transfer N/A

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*This course is obsolete within the CCL.*

AUT-164\_1997SU Automotive Electronics AUT-164

CIS Course ID S11796

Effective Term Summer 1997

End Term Summer 2008

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course covers fundamentals of electrical/electronic circuitry, semi-conductors, and microprocessors. Topics include Ohm's law, circuits, AC/DC current, solid state components, digital applications, and the use of digital multimeters. Upon completion, students should be able to apply Ohm's law to diagnose and repair electrical/electronic circuits using digital multimeters and appropriate service information.

Minimum State  
Prerequisites None

Minimum State None

Corequisites

College Transfer

N/A

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*This course is active within the CCL.*

AUT-171\_2007FA

Auto Climate Control

AUT-171

CIS Course ID S21700

Effective Term Fall 2007

End Term

Class 2 Lab 4 Clinical 0 Work 0 Credit 4

This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis/repair of climate control systems. Topics include diagnosis and repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information.

Minimum State

Prerequisites

None

Minimum State

Corequisites

None

College Transfer

N/A

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*This course is obsolete within the CCL.*

AUT-171\_1997SU

Heating & Air Conditioning

AUT-171

CIS Course ID S13952

Effective Term Summer 1997

End Term Summer 2008

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis/repair of climate control systems. Topics include diagnosis and repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information.

Minimum State

Prerequisites

None

Minimum State

None

Corequisites

College Transfer

N/A

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*This course is active within the CCL.*

AUT-181\_2007FA

Engine Performance 1

AUT-181

CIS Course ID S21701

Effective Term Fall 2007

End Term

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to vehicles equipped with complex engine control systems. Topics include an overview of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices. Upon completion, students should be able to describe operation and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information.

Minimum State

None

Prerequisites

Minimum State

None

Corequisites

College Transfer

N/A

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*This course is obsolete within the CCL.*

AUT-181\_1997SU

Engine Performance-Electrical

AUT-181

CIS Course ID S13254

Effective Term Summer 1997

End Term Summer 2008

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers the principles, systems, and procedures required for diagnosing and restoring engine performance using electrical/electronics test equipment. Topics include procedures for diagnosis and repair of ignition, emission control, and related electronic systems. Upon completion, students should be able to describe operation of and diagnose/repair ignition/emission control systems using appropriate test equipment and service information.

Minimum State

None

Prerequisites

Minimum State

None

Corequisites

College Transfer

N/A

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*This course is active within the CCL.*

AUT-181A\_2007FA

Engine Performance 1 Lab

AUT-181A

CIS Course ID S21702

Effective Term Fall 2007

End Term

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include overviews of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices and emerging engine performance technologies. Upon completion, students should be able to describe operation and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information.

Minimum State

Prerequisites

None

Minimum State

Corequisites

Take AUT-181

College Transfer

N/A

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*This course is obsolete within the CCL.*

AUT-182\_1997SU

Engine Perfor-Elec Lab

AUT-182

CIS Course ID S13352

Effective Term Summer 1997

End Term Summer 2008

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course provides a laboratory setting to enhance the skills for diagnosing and restoring engine performance using electrical/electronics test equipment. Emphasis is placed on practical experiences that enhance the topics presented in AUT 181. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 181.

Minimum State

Prerequisites

None

Minimum State

Corequisites

Take AUT-181

College Transfer                      N/A

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*This course is active within the CCL.*

AUT-183\_2007FA                      Engine Performance 2                      AUT-183

CIS Course ID S21703

Effective Term Fall 2007

End Term

Class 2 Lab 6 Clinical 0 Work 0 Credit 4

This course covers study of the electronic engine control systems, the diagnostic process used to locate engine performance concerns, and procedures used to restore normal operation. Topics will include currently used fuels and fuel systems, exhaust gas analysis, emission control components and systems, OBD II (on-board diagnostics) and inter-related electrical/electronic systems. Upon completion, students should be able to diagnose and repair complex engine performance concerns using appropriate test equipment and service information.

Minimum State Prerequisites                      Take AUT-181

Minimum State Corequisites                      None

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-183\_1997SU                      Engine Performance-Fuels                      AUT-183

CIS Course ID S13275

Effective Term Summer 1997

End Term                      Summer 2008

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers the principles of fuel delivery/management, exhaust/emission systems, and procedures for diagnosing and restoring engine performance using appropriate test equipment. Topics include procedures for diagnosis/repair of fuel delivery/management and exhaust/emission systems using appropriate service information. Upon completion, students should be able to describe, diagnose, and repair engine fuel delivery/management and emission control systems using appropriate service information and diagnostic equipment.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-184\_1997SU                      Engine Perfor-Fuels Lab                      AUT-184

CIS Course ID S13321

Effective Term Summer 1997

End Term              Summer 2008

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course provides a laboratory setting to enhance the skills for diagnosing and repairing fuel delivery/management and emission systems. Emphasis is placed on practical experiences that enhance the topics presented in AUT 183. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 183.

Minimum State                      None  
Prerequisites

Minimum State                      Take AUT-183  
Corequisites

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-185\_1997SU                      Emission Controls                      AUT-185

CIS Course ID S13252

Effective Term Summer 1997

End Term              Summer 2008

Class 1 Lab 2 Clinical 0 Work 0 Credit 2

This course covers the design and function of emission control devices. Topics include chemistry of combustion as well as design characteristics and emission control devices which limit tailpipe, crankcase, and evaporative emissions. Upon completion, students should be able to troubleshoot, test, and service emission control systems.

Minimum State                      None  
Prerequisites

Minimum State                      None  
Corequisites

College Transfer                      N/A

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*This course is active within the CCL.*

AUT-186\_2007FA

PC Skills for Auto Techs

AUT-186

CIS Course ID S21704

Effective Term Fall 2007

End Term

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course introduces students to personal computer literacy and Internet literacy with an emphasis on the automotive service industry. Topics include service information systems, management systems, computer-based systems, and PC based diagnostic equipment. Upon completion, students should be able to access information pertaining to automotive technology and perform word processing.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-186\_1997SU

Automotive Computer Appl

AUT-186

CIS Course ID S13349

Effective Term Summer 1997

End Term              Summer 2008

Class 1 Lab 2 Clinical 0 Work 0 Credit 2

This course introduces computer operating systems, word processing, and electronic automotive service information systems. Emphasis is placed on operation systems, word processing, and electronic automotive service information systems. Upon completion, students should be able to use an operating system to access information pertaining to automotive technology and perform word processing.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                      N/A

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*This course is active within the CCL.*

AUT-211\_1997SU

Automotive Machining

AUT-211

CIS Course ID S14335

Effective Term Summer 1997

End Term

Class 2 Lab 6 Clinical 0 Work 0 Credit 4

This course covers engine machining processes for remanufacturing automotive engines. Emphasis is placed on cylinder head service, machining block surfaces, reconditioning connecting rod assemblies, camshafts, flywheels, and precision measurement. Upon completion, students should be able to explain the operation and proper use of automotive machining equipment.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                                      N/A

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*This course is active within the CCL.*

AUT-212\_2007FA

Auto Shop Management

AUT-212

CIS Course ID S21705

Effective Term Fall 2007

End Term

Class 3 Lab 0 Clinical 0 Work 0 Credit 3

This course covers the principles of management essential to decision-making, communication, authority, and leadership. Topics include shop supervision, shop organization, customer relations, cost effectiveness and work place ethics. Upon completion, students should be able to describe basic automotive shop operation from a management standpoint.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                                      N/A

AUT-112 (Summer 1997) was archived and replaced by AUT-212 (Fall 2007) per CRC 09/20/06.

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*This course is active within the CCL.*

AUT-213\_2007FA

Automotive Servicing 2

AUT-213

CIS Course ID S21706

Effective Term Fall 2007

End Term

Class 1 Lab 3 Clinical 0 Work 0 Credit 2

This course is a lab used as an alternative to co-op placement. Emphasis is placed on shop operations, troubleshooting, testing, adjusting, repairing, and replacing components using appropriate test equipment and service information. Upon completion, students should be able to perform a variety of automotive repairs using proper service procedures and to operate appropriate equipment.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                                      N/A

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*This course is active within the CCL.*

AUT-221\_2007FA

Auto Transm/Transaxles

AUT-221

CIS Course ID S21707

Effective Term Fall 2007

End Term

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers operation, diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair automatic drive trains.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                                      N/A

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*This course is obsolete within the CCL.*

AUT-221\_1997SU

Automatic Transmissions

AUT-221

CIS Course ID S12893

Effective Term Summer 1997

End Term Summer 2008

Class 2 Lab 6 Clinical 0 Work 0 Credit 4

This course covers operation, diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory and diagnose and repair automatic drive trains.

Minimum State Prerequisites None

Minimum State Corequisites None

College Transfer N/A

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*This course is active within the CCL.*

AUT-221A\_2007FA Auto Transm/Transax Lab AUT-221A

CIS Course ID S21710

Effective Term Fall 2007

End Term

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to diagnose and repair automatic drive trains.

Minimum State Prerequisites None

Minimum State Corequisites Take AUT-221

College Transfer N/A

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*This course is obsolete within the CCL.*

AUT-222\_1997SU Adv Auto Drive Trains AUT-222

CIS Course ID S12900

Effective Term Summer 1997

End Term Summer 2008

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course covers advanced diagnosis and repair of automatic drive trains. Topics include testing of sensors, actuators, and control modules using on-board diagnostics, appropriate service information, and equipment. Upon completion, students should be able to perform advanced automatic drive train diagnosis and repair.

Minimum State Prerequisites None

Minimum State Corequisites None

College Transfer N/A

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*This course is active within the CCL.*

AUT-231\_2008SP Man Trans/Axles/Drtrains AUT-231

CIS Course ID S22040

Effective Term Spring 2008

End Term

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair manual drive trains.

Minimum State Prerequisites None

Minimum State Corequisites None

College Transfer N/A

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*This course is obsolete within the CCL.*

AUT-231\_2007FA Man Trans/Axles/Drtrains AUT-231

CIS Course ID S21711

Effective Term Fall 2007

End Term Fall 2008

Class 2 Lab 4 Clinical 0 Work 0 Credit 4

This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair manual drive trains.

Minimum State Prerequisites           None

Minimum State Corequisites           None

College Transfer                   N/A

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*This course is obsolete within the CCL.*

AUT-231\_1997SU                   Manual Drive Trains/Axles                   AUT-231

CIS Course ID S13642

Effective Term Summer 1997

End Term           Summer 2008

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory and diagnose and repair manual drive trains.

Minimum State Prerequisites           None

Minimum State Corequisites           None

College Transfer                   N/A

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*This course is active within the CCL.*

AUT-231A\_2007FA                   Man Trans/Ax/Drtrains Lab                   AUT-231A

CIS Course ID S21712

Effective Term Fall 2007

End Term

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a co-op component in the program. Topics include manual drive train diagnosis, service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to diagnose and repair manual drive trains.

Minimum State Prerequisites	None
Minimum State Corequisites	Take AUT-231
College Transfer	N/A

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*This course is obsolete within the CCL.*

AUT-232\_1997SU                      Manual Dr Trains/Axles Lab                      AUT-232

CIS Course ID S13696

Effective Term Summer 1997

End Term              Summer 2008

Class 0 Lab 3 Clinical 0 Work 0 Credit 1

This course provides a laboratory setting to enhance the skills for diagnosing and repairing manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Emphasis is placed on practical experiences that enhance the topics presented in AUT 231. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 231.

Minimum State Prerequisites	None
Minimum State Corequisites	Take AUT-231
College Transfer	N/A

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*This course is obsolete within the CCL.*

AUT-241\_1997SU                      Adv Chassis/Suspension                      AUT-241

CIS Course ID S11981

Effective Term Summer 1997

End Term              Summer 2008

Class 2 Lab 6 Clinical 0 Work 0 Credit 4

This course provides advanced training in automotive chassis and suspension using computerized two- and four-wheel alignment equipment. Emphasis is placed on suspension and chassis system design, construction, and repair for modern front- and rear-drive vehicles. Upon

completion, students should be able to perform necessary adjustments and repairs on vehicles using computerized alignment equipment.

Minimum State Prerequisites            Take AUT-141

Minimum State Corequisites            None

College Transfer                    N/A

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*This course is obsolete within the CCL.*

AUT-251\_1997FA                    Introduction to Racing                    AUT-251

CIS Course ID S10911

Effective Term Fall 1997

End Term            Fall 2010

Class 3 Lab 0 Clinical 0 Work 0 Credit 3

This course provides information about working safely in a racing environment, different types of racing, and types of car designs. Topics include shop and track safety and an introduction to the racing environment and various car designs. Upon completion, students should be able to work safely at both the shop and track and understand the various types and costs of racing.

Minimum State Prerequisites            None

Minimum State Corequisites            None

College Transfer                    N/A

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*This course is obsolete within the CCL.*

AUT-252\_1997FA                    Racing Engine Preparation                    AUT-252

CIS Course ID S10890

Effective Term Fall 1997

End Term            Fall 2010

Class 3 Lab 9 Clinical 0 Work 0 Credit 6

This course includes selection and fit of proper engine components to maximize power and reliability in today's racing engines. Topics include component selection, blueprinting, machining of components, cylinder head and block preparation, balancing, matching of heads, intake manifold, and camshaft for maximum power. Upon completion, students should be able to assemble a complete racing engine.

Minimum State Prerequisites	Take All: AUT-115 and AUT-116
Minimum State Corequisites	None
College Transfer	N/A

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*This course is obsolete within the CCL.*

AUT-253\_1997FA                      Race Engine Accessories                      AUT-253

CIS Course ID S10937

Effective Term Fall 1997

End Term        Fall 2010

Class 2 Lab 4 Clinical 0 Work 0 Credit 4

This course provides information on selection and use of components in the ignition, fuel, oiling, and cooling systems. Emphasis will be placed on selecting and installing different types of systems to maximize efficiency for engine power and life. Upon completion, students should be able to install the ignition, fuel, oiling, and cooling systems with modifications necessary for particular applications.

Minimum State Prerequisites	Take All: AUT-181 and AUT-183
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Minimum State Corequisites	Take AUT-252
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College Transfer	N/A
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*This course is obsolete within the CCL.*

AUT-254\_2002FA                      Chassis Fabrication                      AUT-254

CIS Course ID S10281

Effective Term Fall 2002

End Term        Fall 2010

Class 2 Lab 9 Clinical 0 Work 0 Credit 5

This course is designed to enable students to build a racing chassis following either a prepared blueprint or their own design. Topics include cutting and fitting various types of tubing, and using machines and saws necessary to fabricate the race car components. Upon completion, students should be able to build a racing chassis with the correct geometric angles.

Minimum State Prerequisites	Take All: WLD-110 and AUB-134
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Minimum State  
Corequisites                      None  
  
College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-254\_1997FA                      Chassis Fabrication                      AUT-254

CIS Course ID S16240

Effective Term Fall 1997

End Term              Summer 2003

Class 3 Lab 9 Clinical 0 Work 0 Credit 6

This course is designed to enable students to build a racing chassis following either a prepared blueprint or their own design. Topics include cutting and fitting various types of tubing, and using machines and saws necessary to fabricate the race car components. Upon completion, students should be able to build a racing chassis with the correct geometric angles.

Minimum State  
Prerequisites                      Take All: WLD-110 and AUB-134

Minimum State  
Corequisites                      None

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-255\_2002FA                      Sheet Metal Fabrication                      AUT-255

CIS Course ID S10250

Effective Term Fall 2002

End Term              Fall 2010

Class 1 Lab 3 Clinical 0 Work 0 Credit 2

This course is designed to build student's skills with the various tools and equipment necessary to make interior and exterior sheet metal panels. Emphasis is placed on cutting, bending, and shaping sheet metal into the various parts necessary to build a race car. Upon completion, students should be able to form and fit to the chassis the metal panels made by them or another manufacturer.

Minimum State  
Prerequisites                      None

Minimum State  
Corequisites                      Take AUT-254

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-255\_1997FA                      Sheet Metal Fabrication                      AUT-255

CIS Course ID S16241

Effective Term Fall 1997

End Term              Summer 2003

Class 1 Lab 6 Clinical 0 Work 0 Credit 3

This course is designed to build student's skills with the various tools and equipment necessary to make interior and exterior sheet metal panels. Emphasis is placed on cutting, bending, and shaping sheet metal into the various parts necessary to build a race car. Upon completion, students should be able to form and fit to the chassis the metal panels made by them or another manufacturer.

Minimum State Prerequisites                      None

Minimum State Corequisites                      Take AUT-254

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-256\_2002FA                      Setting Up the Race Car                      AUT-256

CIS Course ID S10269

Effective Term Fall 2002

End Term              Fall 2010

Class 3 Lab 6 Clinical 0 Work 0 Credit 5

This course covers selection of proper chassis, springs, and shocks; and communicating with the driver in order to make necessary adjustments at the track. Topics include selection of springs and shocks; making changes, and keeping proper records of control arm angles, frame height, and chassis travel. Upon completion, students should be able to check tire temperature and shock travel, and explain how changes in the chassis set-up will increase performance.

Minimum State Prerequisites                      Take AUT-141

Minimum State Corequisites                      Take AUT-254

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-256\_1997FA                      Setting Up the Race Car                      AUT-256

CIS Course ID S16242

Effective Term Fall 1997

End Term        Summer 2003

Class 4 Lab 4 Clinical 0 Work 0 Credit 6

This course covers selection of proper chassis, springs, and shocks; and communicating with the driver in order to make necessary adjustments at the track. Topics include selection of springs and shocks; making changes, and keeping proper records of control arm angles, frame height, and chassis travel. Upon completion, students should be able to check tire temperature and shock travel, and explain how changes in the chassis set-up will increase performance.

Minimum State Prerequisites                      Take AUT-141

Minimum State Corequisites                      Take AUT-254

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-271\_1997SU                      Adv Heating & A/C                      AUT-271

CIS Course ID S13786

Effective Term Summer 1997

End Term        Summer 2008

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course utilizes service information and test equipment to diagnose automatic temperature control and ventilation systems. Topics include advanced testing of sensors, actuators, and control modules using service information, on-board diagnostics, and/or appropriate test equipment. Upon completion, students should be able to perform advanced diagnosis and repair on automatic temperature control and ventilation systems.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-276\_2003SP                      Ase Certifications & Apps                      AUT-276

CIS Course ID S20164

Effective Term Spring 2003

End Term        Summer 2008

Class 3 Lab 9 Clinical 0 Work 0 Credit 6

This course includes a comprehensive overview of all vehicle systems with emphasis on diagnostics, service and repair. Topics include all areas of Automotive Service Excellence (ASE) Certifications through the advanced levels. Upon completion, students should be able to assume duties in the automotive industry and be qualified to take ASE certification tests.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                      N/A

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*This course is obsolete within the CCL.*

AUT-280\_1997SU                      Engine Airflow                      AUT-280

CIS Course ID S11646

Effective Term Summer 1997

End Term        Summer 2008

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course provides in-depth coverage of the effects of power output based on airflow into and out of an internal combustion engine. Emphasis is placed on changes to the induction and exhaust systems documented through flow bench testing to increase engine airflow. Upon completion, students should be able to make changes to carburetors, intake manifolds, cylinder heads, and exhaust manifolds to improve engine airflow and power.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                      N/A

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*This course is active within the CCL.*

AUT-281\_2007FA                      Adv Engine Performance                      AUT-281

CIS Course ID S21713  
Effective Term Fall 2007

End Term

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course utilizes service information and specialized test equipment to diagnose and repair power train control systems. Topics include computerized ignition, fuel and emission systems, related diagnostic tools and equipment, data communication networks, and service information. Upon completion, students should be able to perform diagnosis and repair.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                                      N/A

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*This course is obsolete within the CCL.*

AUT-281\_1997SU                      Adv Engine Performance                      AUT-281

CIS Course ID S11777

Effective Term Summer 1997

End Term              Summer 2008

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course utilizes service information and specialized test equipment to diagnose/repair power train control systems. Topics include computerized ignition, fuel and emission systems, related diagnostic tools and equipment, data communication networks, and service information. Upon completion, students should be able to perform advanced engine performance diagnosis and repair.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                                      N/A

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*This course is obsolete within the CCL.*

AUT-282\_1997SU                      Engine Elec Management                      AUT-282

CIS Course ID S11714

Effective Term Summer 1997

End Term Summer 2008

Class 3 Lab 9 Clinical 0 Work 0 Credit 6

This course includes principles, systems, and procedures required for diagnosing and restoring engine performance/driveability and emission control through mechanical, electrical, and gas analysis. Emphasis is placed on diagnostics using mechanical, electrical (including on-board), and gas analysis to determine root causes for repair purposes. Upon completion, students should be able to diagnose and repair PCM-related engine performance/driveability and emission problems.

Minimum State Prerequisites None

Minimum State Corequisites None

College Transfer N/A

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*This course is active within the CCL.*

AUT-283\_2007FA Adv Auto Electronics AUT-283

CIS Course ID S21714

Effective Term Fall 2007

End Term

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course covers advanced electronic systems on automobiles. Topics include microcontrollers, on-board communications, telematics, hybrid systems, navigation, collision avoidance, and electronic accessories. Upon completion, students should be able to diagnose electronic systems using appropriate service information, procedures, and equipment and remove/replace/reprogram controllers, sensors, and actuators.

Minimum State Prerequisites Take AUT-161

Minimum State Corequisites None

College Transfer N/A

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*This course is obsolete within the CCL.*

AUT-283\_1999FA Adv. Electronic Diagnosis AUT-283

CIS Course ID S10713

Effective Term Fall 1999

End Term Summer 2008

Class 1 Lab 2 Clinical 0 Work 0 Credit 2

This course covers the skills needed to properly diagnose complex electrical/electronic problems in automotive systems in detail. Topics include the use of equipment such as oscilloscopes, scan tools, and digital meters as an effective aid in the proper diagnosis and troubleshooting of problems in complex driveability and electrical systems. Upon completion students should be able to effectively and systematically diagnose, test, and repair complex electrical problems using appropriate service information and diagnostic equipment.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                                      N/A

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*This course is active within the CCL.*

AUT-284\_2003SP                      Emerging Aut Technologies                      AUT-284

CIS Course ID S20163

Effective Term Spring 2003

End Term

Class 2 Lab 6 Clinical 0 Work 0 Credit 4

This course covers emerging technologies in the automotive industry and the diagnostics associated with those technologies. Topics include exploring new technologies, diagnostic tools and methods, and repairs. Upon completion, students should be able to understand emerging automotive technologies.

Minimum State Prerequisites                      None

Minimum State Corequisites                      None

College Transfer                                      N/A

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*This course is active within the CCL.*

AUT-285\_2007FA                      Intro to Alternative Fuels                      AUT-285

CIS Course ID S21715

Effective Term Fall 2007

End Term

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course is an overview of alternative fuels and alternative fueled vehicles. Topics include composition and use of alternative fuels, including compressed natural gas, propane, biodiesel, ethanol, electric, hydrogen, synthetic fuels, and vehicles that use alternative fuels. Upon completion, students should be able to identify alternative fuel vehicles, explain how each alternative fuel delivery system works, and make minor repairs.

Minimum State Prerequisites	None
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Minimum State Corequisites	None
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College Transfer	N/A
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