

# AUTO 093A: INTRO TO LIGHT & MEDIUM DUTY DIESEL SYSTEMS

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**Originator**

doanderson

**Justification / Rationale**

Periodic review.

**Effective Term**

Fall 2019

**Credit Status**

Credit - Degree Applicable

**Subject**

AUTO - Automotive Technology

**Course Number**

093A

**Full Course Title**

Intro to Light & Medium Duty Diesel Systems

**Short Title**

INTRO TO DIESEL

**Discipline****Disciplines List**

Automotive Technology

**Modality**

Face-to-Face  
100% Online

**Catalog Description**

This course is designed as an introduction to light duty diesel systems. Students will explore the operation and function of the key systems related to compression ignition engines. Students will learn safety of a repair shop, vehicles, and of environmental impact. Students will gain knowledge of diesel engine design, engine oil types, correct application, diesel emission systems, and fuel delivery systems.

**Schedule Description**

This course is designed as an introduction to light duty diesel systems. Students will explore the operation and function of the key systems related to compression ignition engines. Advisory: RDG 061

**Lecture Units**

2

**Lecture Semester Hours**

36

**Lab Units**

0

**In-class Hours**

36

**Out-of-class Hours**

72

**Total Course Units**

2

**Total Semester Hours**

108

**Prerequisite Course(s)**

Advisory: RDG 061

**Required Text and Other Instructional Materials****Resource Type**

Web/Other

**Open Educational Resource**

Yes

**Year**

2018

**Description**

Electude - <https://www.electude.com/>  
[https://cacollegeofthedesert.electude.com/bundlelist\\_0](https://cacollegeofthedesert.electude.com/bundlelist_0)

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**Class Size Maximum**

35

**Entrance Skills**

ADVISORY SKILLS:

Use various reading strategies to prepare, read and comprehend expository text

**Prerequisite Course Objectives**

RDG 061-Use SQ3R /or SOAR along with outlining, note-taking, mapping summarizing and other strategies to prepare, read, comprehend expository text.

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**Entrance Skills**

Read a variety of texts fluently

**Prerequisite Course Objectives**

RDG 061-Read a variety of texts fluently.

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**Entrance Skills**

Write organized summaries reactions that capture main idea and supporting details

**Prerequisite Course Objectives**

RDG 061-Write organized summaries reactions that capture main idea and supporting details.

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**Entrance Skills**

Understand multiple word meanings, uses synonyms

**Prerequisite Course Objectives**

RDG 061-Understand multiple word meanings, uses synonyms

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**Course Content**

- Job opportunities and certifications
- History of the diesel engine

- Origin of the diesel engine
- Applications of diesel engines
- Gasoline/diesel configurations
- Future
- Safety
  - Shop tools and repair tools
  - Shop safety
  - Vehicles safety
- Introduction:
  - 4-stroke
  - 2-stroke
- Diesel systems maintenance
- Lubrication System
  - Lubrication
  - Lubrication components
- Cooling system
  - Cooling
  - Cooling system components
- Diesel Fuel
- Introduction
- Characteristics
- Emissions systems
- Component Identification
- Service Precautions

### Course Objectives

	Objectives
Objective 1	Recognize job opportunities offered for diesel engine repair.
Objective 2	Recognize certifications of diesel engine repair
Objective 3	Differentiate pertinent information for documentation
Objective 4	Ascertain environmental impact of diesel engines
Objective 5	Decipher importance of personal safety and shop safety
Objective 6	Deduce correct oil applications
Objective 7	Describe basic function and operation of key diesel systems.

### Student Learning Outcomes

	Upon satisfactory completion of this course, students will be able to:
Outcome 1	Distinguish the importance of proper maintenance of light duty diesel engines is critical to proper operation.
Outcome 2	Deduce employment opportunities in the automotive field for light duty diesel technicians.

### Methods of Instruction

Method	Please provide a description or examples of how each instructional method will be used in this course.
Technology-based instruction	Electude learning: Web-based, interactive modules. Each module includes chapter review and quizzes.
Supplemental/External Activity	Students may be required to visit an automotive service and repair facility of their choice and write a report.
Self-exploration	Internet research covering a subject of choice.
Role Playing	Student are required to participate in classroom discussions on a weekly basis.

Discussion	Student are required to participate in classroom discussions on a weekly basis.
Collaborative/Team	Student are required to participate in classroom discussions on a weekly basis.
Participation	Student are required to participate in classroom discussions on a weekly basis.
Lecture	Weekly discussions

### Methods of Evaluation

Method	Please provide a description or examples of how each evaluation method will be used in this course.	Type of Assignment
College level or pre-collegiate essays	Final paper may be assigned to evaluate students	Out of Class Only
Student participation/contribution	Student are required to participate in classroom discussions on a weekly basis.	In Class Only
Mid-term and final evaluations	Electude learning: Web-based, interactive modules. Each module includes chapter review and quizzes.	In and Out of Class
True/false/multiple choice examinations	Electude learning: Web-based, Interactive modules. Each module includes chapter homework questions.	In and Out of Class
Term or research papers	Student maybe assigned a research paper or a book report	Out of Class Only
Written homework	Weekly modules assigned on a self-paced basis, with weekly completion.	Out of Class Only

### Assignments

#### Other In-class Assignments

- Online class discussion: Student are required to participate in classroom discussions on a weekly basis. Responses between students required.
- Web-based research: Student maybe assigned a research paper or a book report pertaining to course content.
- Analysis of customer/shop interaction: Students may be required to discuss observation made on visit to a shop.

#### Other Out-of-class Assignments

- Independent Research: Internet research pertaining to course material of their choice.
- Independent shop interviews: Information gathered during a shop visit will be used to complete class assignment.
- Electude learning: 22 Web-based, interactive modules. Each module includes chapter review and quizzes.

### Grade Methods

Letter Grade Only

### Distance Education Checklist

### Instructional Materials and Resources

### Effective Student/Faculty Contact

Which of the following methods of regular, timely, and effective student/faculty contact will be used in this course?

#### Within Course Management System:

Timely feedback and return of student work as specified in the syllabus  
 Discussion forums with substantive instructor participation  
 Private messages  
 Online quizzes and examinations  
 Weekly announcements

#### External to Course Management System:

Direct e-mail

**Briefly discuss how the selected strategies above will be used to maintain Regular Effective Contact in the course.**

During the course, students and instructor interaction is on a weekly basis, however, students can contact the instructor for more assistance as needed

## **Online Course Enrollment**

**Maximum enrollment for online sections of this course**

35

## **Other Information**

### **MIS Course Data**

**CIP Code**

47.0604 - Automobile/Automotive Mechanics Technology/Technician.

**TOP Code**

094800 - Automotive Technology

**SAM Code**

C - Clearly Occupational

**Basic Skills Status**

Not Basic Skills

**Prior College Level**

Not applicable

**Cooperative Work Experience**

Not a Coop Course

**Course Classification Status**

Credit Course

**Approved Special Class**

Not special class

**Noncredit Category**

Not Applicable, Credit Course

**Funding Agency Category**

Not Applicable

**Program Status**

Program Applicable

**Transfer Status**

Not transferable

**Allow Audit**

No

**Repeatability**

No

**Materials Fee**

No

**Additional Fees?**

No

## Approvals

**Curriculum Committee Approval Date**

11/06/2018

**Academic Senate Approval Date**

11/29/2018

**Board of Trustees Approval Date**

12/14/2018

**Course Control Number**

CCC000567627

**Programs referencing this course**

Automotive Air Conditioning Certificate of Achievement (<http://catalog.collegeofthedesert.eduundefined?key=104>)

Automotive Introductions (<http://catalog.collegeofthedesert.eduundefined?key=201>)

Automotive Technology AS Degree (<http://catalog.collegeofthedesert.eduundefined?key=57>)