

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



MASTER SYLLABUS

**COURSE NUMBER – COURSE NAME
AUTO 102 – DIESEL ENGINES**

Created by: Jeffery Stinson

Updated by: Brandon Baldwin

Canino School of Engineering Technology

Department: Automotive Technology Program

Semester/Year: Spring 2018

- A. **TITLE:** Diesel Engines
- B. **COURSE NUMBER:** AUTO 102
- C. **CREDIT HOURS:** (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

Credit Hours: 2
Lecture Hours: 1 per week
Lab Hours: (1) 110 minute lab per week
Other: per week

Course Length: 15 Weeks

- D. **WRITING INTENSIVE COURSE:** Yes No
- E. **GER CATEGORY:** None: Yes: GER !
If course satisfies more than one: GER !
- F. **SEMESTER(S) OFFERED:** Fall Spring Fall & Spring

G. **COURSE DESCRIPTION:**

A course, which considers the basic construction of the diesel engine. Topics will include classification of diesel engines, fuels, turbochargers, injection systems, and pre-heater systems. Laboratory will consist of hands-on experience in engine troubleshooting, parts identification, adjustments and testing. The Course will meet for one-hour lecture, two hours laboratory per week.

- H. **PRE-REQUISITES:** None Yes If yes, list below:

AUTO 101, AUTO 111, MSPT 101, or permission of instructor.

CO-REQUISITES: None Yes If yes, list below:

I. STUDENT LEARNING OUTCOMES: (see key below)

By the end of this course, the student will be able to:

<u>Course Student Learning Outcome</u> <u>[SLO]</u>	<u>Program Student Learning Outcome</u> <u>[PSLO]</u>	<u>GER</u> <i>[If Applicable]</i>	<u>ISLO & SUBSETS</u>	
Demonstrate shop laboratory safety.	ALO1, ALO2, ALO3, ALO4	N/A	2-Crit Think 5-Ind, Prof, Disc, Know Skills ISLO	CA IA PS Subsets
Demonstrate skills necessary to perform diesel engine service.	ALO1, ALO2, ALO3, ALO4	N/A	2-Crit Think 5-Ind, Prof, Disc, Know Skills ISLO	CA IA PS Subsets
Use service literature to perform diesel engine disassembly, inspection and reassembly.	ALO1, ALO2, ALO3, ALO4	N/A	2-Crit Think 5-Ind, Prof, Disc, Know Skills ISLO	CA IA PS Subsets
Explain fundamentals of diesel engine fuelsystem operation.	ALO1, ALO2, ALO3, ALO4	N/A	2-Crit Think 5-Ind, Prof, Disc, Know Skills ISLO	CA IA PS Subsets
Demonstrate skills necessary to maintain, diagnose diesel engine fuel systems.	ALO1, ALO2, ALO3, ALO4	N/A	2-Crit Think 5-Ind, Prof, Disc, Know Skills ISLO	CA IA PS Subsets
		N/A	ISLO ISLO ISLO	Subsets Subsets Subsets Subsets

		N/A	ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
		N/A	ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
		N/A	ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
		N/A	ISLO ISLO ISLO	Subsets Subsets Subsets Subsets

KEY	<u>Institutional Student Learning Outcomes [ISLO 1 – 5]</u>
ISLO #	ISLO & Subsets
1	Communication Skills Oral [O], Written [W]
2	Critical Thinking <i>Critical Analysis [CA] , Inquiry & Analysis [IA] , Problem Solving [PS]</i>
3	Foundational Skills <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i>
4	Social Responsibility <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
5	Industry, Professional, Discipline Specific Knowledge and Skills

*Include program objectives if applicable. Please consult with Program Coordinator !

J. **APPLIED LEARNING COMPONENT:** Yes No

If YES, select one or more of the following categories:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Classroom/Lab | <input type="checkbox"/> Civic Engagement |
| <input type="checkbox"/> Internship | <input type="checkbox"/> Creative Works/Senior Project |
| <input type="checkbox"/> Clinical Placement | <input type="checkbox"/> Research |
| <input type="checkbox"/> Practicum | <input type="checkbox"/> Entrepreneurship |
| <input type="checkbox"/> Service Learning | (program, class, project) |
| <input type="checkbox"/> Community Service | |

K. **TEXTS:**

Wright, Gus. Automotive Diesel Technology, 1st. ed. Upper Saddle River: Prentice Hall, 2014. Print.

L. **REFERENCES:**

All Data, Manufacturers Service Manuals, IATN.

M. **EQUIPMENT:** None Needed: Students are required to have tools from the tool list.

N. **GRADING METHOD:** A-F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

Tests, Quizzes, Homework, Lab Tasks, Performance Exam, Participation.

P. **DETAILED COURSE OUTLINE:**

- I. Introduction
- II. Service Information
- III. Special diesel engine service tools
- IV. Diesel engine service safety and environmental concerns
- V. Diesel engine components
- VI. Diesel engine lubrication system
- VII. Diesel engine cooling system
- VIII. Diesel engine breathing system
- IX. Diesel engine retarder system
- X. Diesel engine overhaul-ICE
- XI. Diesel engine fuel system
- XII. Engine management electronics
- XIII. Emissions

Q. **LABORATORY OUTLINE:** None Yes

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