

ADVANCED AUTO MECHANICS FOR THE AUTOMOTIVE PROFESSIONAL

DATE:

INDUSTRY SECTOR: Transportation Sector

PATHWAY: Systems Diagnostics, Service and Repair

CALPADS TITLE: Advanced Systems Diagnostics, Service, and Repair (Capstone)

CALPADS CODE: 8532

HOURS:

Total	Classroom	Laboratory/CC/CVE
180	78	102

JOB TITLE	O*NET CODE	JOB TITLE	O*NET CODE
Automotive Master Mechanics	49-3023.01	Automotive Specialty Technicians	49-3023.02
Automotive Engineers	17-2141.02	Parts Salespersons	41-2022.00

COURSE DESCRIPTION:

This course is Semester 1 of a 4 Semester course sequence. This course is an introduction to automotive service and repair, shop safety and shop operation, as well as tool safety use and identification. This course will also cover automotive engine repair and heating and air conditioning. Upon completion of all four semesters, the student will be prepared for an entry level position in today’s automotive service industry and prepared to be ASE certified.

A-G APPROVAL: No

ARTICULATION: None

DUAL ENROLLMENT: None

PREREQUISITES: None

METHODS OF INSTRUCTION

- Direct instruction
- Group and individual applied projects
- Multimedia
- Demonstration
- Field trips
- Guest speakers

STUDENT EVALUATION:

- Student projects
- Written work
- Exams
- Observation record of student performance
- Completion of assignment

INDUSTRY CERTIFICATION:

- None

RECOMMENDED TEXTS:

- CDX automotive online

PROGRAM OF STUDY

Grade	Fall	Spring	Year	Course Type	Course Name
9, 10, 11, 12				Concentrator	AUTO FUNDIMENTALS
11, 12				Capstone	ADVANCED AUTO MECHANICS FOR THE AUTOMOTIVE PROFESSIONAL

I.	INTRODUCTION	CR	Lab/ CC	Standards
	A. Course Outlines B. ROP Automotive Pathway Overview C. ASE Certification D. The automotive business E. Basic shop operation	3	0	Academic: RLST: 11-12.10, 11-12.3 WS: 11-12.4 A-CED: 4 A-REI: 1 SEP: 1, 2, 3, 4, 5, 6, 7, 8 PS: PS3 CTE Anchor: Communications: 2.1, 2.2 Technology: 4.4, 4.5 Ethics and Legal Responsibilities: 8.1 CTE Pathway: C1.1
II.	GENERAL SHOP SAFETY	CR	Lab/ CC	Standards
	A. Shop map B. Safety equipment and locations C. Shop equipment safety D. Hand and power tool safety E. Emergency equipment F. Hazardous materials (MSDS) G. Safety Test	12	0	Academic: RLST: 11-12.10, 11-12.3 WS: 11-12.4 A-CED: 4 A-REI: 1 SEP: 1, 2, 3, 4, 5, 6, 7, 8 PS: PS3 CTE Anchor: Communications: 2.1, 2.2, 2.3, 2.4, 2.5 Career Planning and Management: 3.1, 3.2, 3.3 Technology: 4.4, 4.5 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7 Responsibility and Flexibility: 7.6, 7.7, 7.8 Ethics and Legal Responsibilities: 8.1, 8.2, 8.3, 8.4 Leadership and Teamwork: 9.1, 9.2, 9.3

				Technical Knowledge and Skills: 10.1, 10.2, 10.3, 10.4 CTE Pathway: C1.1, C1.2, C1.3, C1.4, C2.1, C2.2, C2.3, C2.4, C2.5, C2.6, C2.7
III.	CAREER	CR	Lab/CC	Standards
	A. Portfolio work B. Resume C. Job application D. Interview techniques	15	0	Academic: RLST: 11-12.10, 11-12.3 WS: 11-12.4 A-CED: 4 A-REI: 1 SEP: 1, 2, 3, 4, 5, 6, 7, 8 PS: PS3 CTE Anchor: Communications: 2.1, 2.2, 2.3, 2.4, 2.5 Career Planning and Management: 3.1, 3.2, 3.3 Technology: 4.4, 4.5 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7 Responsibility and Flexibility: 7.6, 7.7, 7.8 Ethics and Legal Responsibilities: 8.1, 8.2, 8.3, 8.4 Leadership and Teamwork: 9.1, 9.2, 9.3 Technical Knowledge and Skills: 10.1, 10.2, 10.3, 10.4 CTE Pathway: C1.1, C1.2, C1.3, C1.4, C2.1, C2.2, C2.3, C2.4, C2.5, C2.6, C2.7, C4.1, C4.2, C4.3, C5.1, C5.2, C5.3, C5.4, C5.5, C5.6
IV.	ENGINE REPAIR (A1)	CR	Lab/CC	Standards

	<p>A. General: Engine Diagnosis; Removal and Reinstallation (R&R)</p> <p>B. Cylinder Head and Valve Train Diagnosis and Repair</p> <p>C. Engine Block Assembly Diagnosis and Repair</p> <p>D. Lubrication and Cooling Systems Diagnosis and Repair</p>	25	62	<p>Academic: RLST: 11-12.10, 11-12.3 WS: 11-12.4 A-CED: 4 A-REI: 1 SEP: 1, 2, 3, 4, 5, 6, 7, 8 PS: PS3</p> <p>CTE Anchor: Communications: 2.1, 2.2, 2.3, 2.4, 2.5 Career Planning and Management: 3.1, 3.2, 3.3 Technology: 4.4, 4.5 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7 Responsibility and Flexibility: 7.6, 7.7, 7.8 Ethics and Legal Responsibilities: 8.1, 8.2, 8.3, 8.4 Leadership and Teamwork: 9.1, 9.2, 9.3 Technical Knowledge and Skills: 10.1, 10.2, 10.3, 10.4</p> <p>CTE Pathway: C1.1, C1.2, C1.3, C1.4, C2.1, C2.2, C2.3, C2.4, C2.5, C2.6, C2.7, C4.1, C4.2, C4.3, C5.1, C5.2, C5.3, C5.4, C5.5, C5.6</p>
V.	HEATING AND AIR CONDITIONING (A7)	CR	Lab/CC	Standards
	<p>A. General: A/C System Diagnosis and Repair</p> <p>B. Refrigeration System Component Diagnosis and Repair</p> <p>C. Heating, Ventilation, and Engine Cooling Systems Diagnosis and Repair</p> <p>D. Operating Systems and Related Controls, Diagnosis and Repair</p> <p>E. Refrigerant Recovery, Recycling, and Handling</p>	23	40	<p>Academic: RLST: 11-12.10, 11-12.3 WS: 11-12.4 A-CED: 4 A-REI: 1 SEP: 1, 2, 3, 4, 5, 6, 7, 8 PS: PS3</p> <p>CTE Anchor: Communications:</p>

			2.1, 2.2, 2.3, 2.4, 2.5 Career Planning and Management: 3.1, 3.2, 3.3 Technology: 4.4, 4.5 Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4 Health and Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7 Responsibility and Flexibility: 7.6, 7.7, 7.8 Ethics and Legal Responsibilities: 8.1, 8.2, 8.3, 8.4 Leadership and Teamwork: 9.1, 9.2, 9.3 Technical Knowledge and Skills: 10.1, 10.2, 10.3, 10.4 CTE Pathway: C1.1, C1.2, C1.3, C1.4, C2.1, C2.2, C2.3, C2.4, C2.5, C2.6, C2.7, C4.1, C4.2, C4.3, C5.1, C5.2, C5.3, C5.4, C5.5, C5.6, C6.3
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Entered by:

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