

ILLINOIS VALLEY COMMUNITY COLLEGE



COURSE OUTLINE

DIVISION: Workforce Development

COURSE: ATO 2290 - Automotive Certification

Date: Spring 2014

Credit Hours: 1

Prerequisite(s): ATO 1210, 1220, 1240, 1250, 1260, 2200, 2210, 2220, 2230 or consent of instructor.

Delivery Method:

<input checked="" type="checkbox"/> Lecture	1 Contact Hours (1 contact = 1 credit hour)
<input type="checkbox"/> Seminar	0 Contact Hours (1 contact = 1 credit hour)
<input type="checkbox"/> Lab	0 Contact Hours (2 contact = 1 credit hour)
<input type="checkbox"/> Clinical	0 Contact Hours (3 contact = 1 credit hour)
<input type="checkbox"/> Online	
<input type="checkbox"/> Blended	

Offered: Fall Spring Summer

IAI Equivalent –**Only for Transfer Courses**–go to <http://www.itransfer.org>.

CATALOG DESCRIPTION:

This lecture course is designed to assist the advanced automotive student or the experienced automotive technician who is preparing to take the ASE (Automotive Service Excellence) certification exams.

GENERAL EDUCATION GOALS ADDRESSED

[See the last page of this form for more information.]

Upon completion of the course, the student will be able:

[Choose those goals that apply to this course.]

- To apply analytical and problem solving skills to personal, social and professional issues and situations.
- To communicate orally and in writing, socially and interpersonally.
- To develop an awareness of the contributions made to civilization by the diverse cultures of the world.
- To understand and use contemporary technology effectively and to understand its impact on the individual and society.
- To work and study effectively both individually and in collaboration with others.
- To understand what it means to act ethically and responsibly as an individual in one's career and as a member of society.
- To develop and maintain a healthy lifestyle physically, mentally, and spiritually.
- To appreciate the ongoing values of learning, self-improvement, and career planning.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals.]

Upon completion of the course, the student will be able to:

1. Understand the basic rules for taking an objective exam.
2. Be able to identify "action words" on a written examination.
3. Explain the correct procedure for answering true-false questions.
4. Explain the correct procedure for answering multiple choice questions.
5. Explain the correct procedure for answering Technician A - Technician B questions.
6. Explain the correct procedure for answering direct or completion questions.
7. Explain the correct procedure for answering except or least likely questions.
8. Show a competency of at least 70% on the following Engine Repair Test Areas
 - A. General Engine Diagnosis
 - B. Cylinder Head and Valve Train Diagnosis and repair.
 - C. Engine Block Diagnosis and Repair
 - D. Lubrication and Cooling System Diagnosis and Repair
 - E. Fuel, Electrical, Ignition and Exhaust System Inspection and Service
9. Show a competency of at least 70% on the following Automatic Transmission /Transaxle Test Areas.
 - A. General Transmission/Transaxle Diagnosis
 1. Mechanical/Hydraulic Systems
 2. Electronic Systems
 - B. In-Vehicle Transmission/Transaxle Maintenance and Repair.
 - C. Off-Vehicle Transmission/Transaxle Repair
 1. Removal and Installation
 2. Disassembly and Reassembly
 3. Friction and Reaction Units
10. Show a competency of at least 70% on the following Manual Drive Train and Axle Test Areas.
 - A. Clutch Diagnosis and Repair

- B. Transmission Diagnosis and Repair
 - C. Transaxle Diagnosis and Repair
 - D. Drive Shaft, Half Shaft and Universal Joint/Constant Velocity (CV) Joint Diagnosis and Repair (Front and Rear Wheel Drive).
 - E. Rear Axle Diagnosis and Repair
 - 1. Ring and Pinion Gears
 - 2. Differential Case/Carrier Assembly
 - 3. Limited Slip/Locking Differential
 - 4. Axle Shafts
 - F. Four-Wheel Drive/All-Wheel Drive Component Diagnosis and Repair.
11. Show a competency of at least 70% on the following Suspension and Steering Test Areas.
- A. Steering Systems Diagnosis and Repair
 - 1. Steering Columns
 - 2. Steering Units
 - 3. Steering Linkage
 - B. Suspension Systems Diagnosis and Repair
 - 1. Front Suspensions
 - 2. Rear Suspensions
 - C. Related Suspension and Steering Service
 - D. Wheel Alignment Diagnosis, Adjustment and Repair
 - E. Wheel and Tire Diagnosis and Repair
12. Show a competency of at least 70% on the following Braking System Areas.
- A. Hydraulic System Diagnosis and Repair
 - 1. Master Cylinder
 - 2. Lines and Hoses
 - 3. Valves and Switches
 - 4. Bleeding, Flushing and Leak Testing
 - B. Drum Brake Diagnosis and Repair
 - C. Disc Brake Diagnosis and Repair
 - D. Power Assist Units Diagnosis and Repair
 - E. Miscellaneous System Diagnosis and Repair
 - F. Electronic Brake Control Systems - Anti-Lock Brake Systems (ABS), Traction Control Systems (TCS), and Electronic Stability Control System (ESC) Diagnosis and Repair.
13. Show a competency of at least 70% on the following Electrical System Test Areas.
- A. General Electrical/Electronic System Diagnosis
 - B. Battery Diagnosis and Repair
 - C. Starting System Diagnosis and Repair
 - D. Charging System Diagnosis and Repair
 - E. Lighting System Diagnosis and Repair
 - F. Gauges, Warning Devices and Driver Information Systems Diagnosis and Repair
 - G. Horn and Wiper/Washer Diagnosis and Repair
 - H. Accessories Diagnosis and Repair
14. Show a competency of at least 70% on the following Heating and Air Conditioning Test Areas.
- A. A/C System Service, Diagnosis and Repair
 - B. Refrigeration System Component Diagnosis and Repair
 - 1. Compressor and Clutch

- 2. Evaporator, Condenser and Related Components
- C. Heating and Engine Cooling Systems Diagnosis and Repair
- D. Operating Systems and Related Controls Diagnosis and Repair
 - 1. Electrical
 - 2. Vacuum/Mechanical
 - 3. Automatic and Semi-Automatic Heating, Ventilating and A/C Systems
- E. Refrigerant Recovery, Recycling, Handling and Retrofit.
- 15. Show a competency of at least 70% on the following Engine Performance Test Areas.
 - A. General Engine Diagnosis
 - B. Ignition System Diagnosis and Repair
 - C. Fuel, Air Induction and Exhaust Systems Diagnosis and Repair
 - D. Emission Control Systems Diagnosis and Repair (Including OBDII)
 - 1. Positive Crankcase Ventilation
 - 2. Exhaust Gas Recirculation
 - 3. Secondary Air Injection (AIR) and Catalytic Converter
 - 4. Evaporative Emission Systems
 - E. Computerized Engine Controls Diagnosis and Repair (Including OBDII)

COURSE TOPICS AND CONTENT REQUIREMENTS:

I. Test Taking Techniques

A. Rules for taking an ASE Certification Exam.

- 1. Read the directions twice
- 2. Underline the important words in the directions.
- 3. Every question has one right answer and three wrong answers.
- 4. Read each question and ALL of the possible answers.
- 5. Answer the question based ONLY on the choices given.
- 6. Don't try to "read into" the question or add information that is not provided
- 7. Skip difficult questions and come back to them later.
- 8. Do not spend too much time on any one question.
- 9. Do not rush through the questions frantically.
- 10. Look for action words
- 11. Answer every question, don't leave any answers blank.
- 12. ASE test scores are based on the number of right answers you provide.
- 13. A question left unanswered is scored as wrong, so there is no penalty for guessing.

B. State-of-Mind for taking the Exam.

- 1. Do not be afraid of the exam.
- 2. Try not to be nervous, this can lead to a state of confusion.
- 3. Look at the exam as a challenge
- 4. Arrive at the test facility one half-hour prior to the time the test begins.
- 5. Relax and Clear your mind before the testing begins

C. Reviewing Vs. Cramming

- 1. Reviewing
 - a. A final organized and consolidation of material or course work.
 - b. Establishes order and continuity between parts and subject matter.
- 2. Cramming

- a. A futile attempt to memorize a great deal of material at the last minute.
- b. Shortsighted and superficial work.

INSTRUCTIONAL METHODS:

1. Lecture
2. Videotapes
3. DVD's
4. Class Discussions

INSTRUCTIONAL MATERIALS:

1. Textbook
2. ASE Challenge (practice ASE tests in all areas)
3. Handouts

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

1. Complete classroom assignments
2. Complete "ASE Challenge" practice exams for all eight areas
3. Attendance
4. Attitude
5. Class Participation

OTHER REFERENCES

Course Competency/Assessment Methods Matrix

ATO 2290 - Automotive Certification		Assessment Options																																		
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment				
	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D										
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.																																				
Understand the basic rules for taking an objective exam.								X																					X							
Be able to identify "action words" on a written examination.								X																									X			
Explain the correct procedure for answering true-false questions.								X																										X		
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