

AU3.317 - Electrical Systems & Engine Performance

Course Syllabus for Winter 2022

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My office hours are from 7:30 - 8:00am Monday through Thursday or by appointment. Class meets Monday through Thursday 8:00am - 11:50pm in AT-A 111.

Welcome to Electrical Systems & Engine Performance. In this class you will explore theory, diagnosis, and service for the Electrical and Engine Performance systems found in modern vehicles.

Our learning activities are designed to improve your ability to practice the following:

Course Learning Outcomes:

- 1) Demonstrate professional, safe, and diligent work habits
- 2) Inspect, service, and repair Electrical/Electronic Systems
- 3) Inspect, service, and repair Engine Performance Systems

To help you prepare to work as an entry level automotive technician we will study these...

Learning Units:

- 1) Safety, DC Electrical theory, Electrical diagnosis
- 2) Lighting, Electronic Sensors, 4-Stroke Ignition Engines
- 3) Batteries, Electronic Control, Ignition Systems
- 4) Starting System, Wire Repair, Fuel Injection
- 5) Charging System, No Start Diagnosis
- 6) Electrical Accessories, Emission Controls

For each learning unit you will have reading assignments, quizzes, homework assignments, classroom learning, ASE style online tests, MOPAR/CAP certifications, and lab assignments. In the lab you will practice Master Automobile Service Technician (MAST) vehicle service tasks as outlined by the [ASE Education Foundation](#).

Grading System:

Professional Work Habits.....	10% of final grade
Quizzes.....	10% of final grade
Homework Assignments.....	20% of final grade
Unit Tests.....	15% of final grade
ASE Lab Activities	30% of final grade
ASE Style Final Exam.....	15% of final grade

Professional Work Habits grade is based on: Attendance, professional attire, professional attitude, safety practices including wearing/using appropriate PPE (Personal Protective Equipment), and time on task. You will earn a maximum of 3 points per day.

- **Attendance:** 2 of the 3 points you receive for attendance each day come from being punctual and present. You will get 2 points for showing up on time and staying the entire class period. You will only get 1 point if you are late or leave early. You will also receive 1 point a day for being professional. Zero points will be awarded for an absence. There are no excused absences. You are either here or not.

- **Absence Policy:** Due to the amount of content presented in this course, only a certain amount of absence is permitted. Eight (8) undocumented absences during the 11 week term will result in an automatic course grade of "F" for non-participation. Only absences covered through the Center for Accessibility Resources, or documented emergency absences will be excused. Documentation must be physically handed to the instructor within five (5) business days for the absence to be excused.
- **Professional attire:** Uniform shirts will be worn whenever you are at the ATTC. Shirts will be buttoned up. If wearing extra attire such as a hoodie or sweatshirt, it must be worn underneath the uniform shirt. You may also wear your employer's uniform shirt as long as the shirt is collared. If you do not have a uniform shirt, you will not be allowed to work in the shop. Pants must be made of burn/tear resistant material such as denim, canvas, or twill. No Shorts. Shoes need to be closed toed.
- **Professional attitude:** Be respectful and courteous to everyone and their vehicles. We often have tours through our facility. The tour groups could be high school students or even the Governor so please watch your language and behavior while on campus. You will be held accountable to the [Student Code of Conduct](#), which outlines expectations pertaining to academic honesty (including cheating and plagiarism), classroom conduct, and general conduct. While lecturing I expect your full attention and thus cell phone and computer use is prohibited except for students with disabilities.
- **Safety Practices:** Proper PPE must be worn at all times while in the shop or laboratory environments. You must supply your own safety glasses. If wearing regular glasses, side shields are recommended. **LBCB does not recommend contact lenses, not even under safety glasses!** The college will provide hearing protection.
- **Time on task:** Did you come to work or socialize? Over the course of ten weeks we must cover a lot of material so staying on task is vital to your success in this class.

Quizzes: Some quizzes will be graded, and some will not be. The ungraded quizzes are participation quizzes and you will receive a 100% for participating. We will review the answers in class. Participation quizzes and date assigned quizzes may not be made up. Some quizzes are on the computer and some are handwritten.

Homework Assignments: There are 18 homework assignments in total, 9 textbook and 9 MOPAR/CAP certifications. The textbook assignments are based on the chapter readings each week. The readings precede the class lectures, so it is important to do them on time. Assignments are due one week from opening. I will accept late assignments up to one week late at a 10% penalty.

MOPAR/CAP Certifications: The 9 certifications are listed below.

- 1) 0013408 – Connecting with the Customer
- 2) 0012208 – Introduction to TechCONNECT
- 3) 0014108 - wiTECH 2.0 Fundamentals
- 4) 0014208 - Flight Recording with wiTECH 2.0
- 5) 0014308 - Flashing and ECU with wiTECH 2.0
- 6) 0013008 - Introduction to Electrical Phase 1
- 7) 0013108 - Introduction to Electrical Phase 2
- 8) 0012408 – New Vehicle Preparation Version 2
- 9) 0012708 - High Voltage Vehicle Safety and Awareness

Unit Tests: There are 6 unit tests in total. The tests are presented in an ASE style format at the end of each learning unit. The questions are based on information from lectures, quizzes, lab assignments, and online assignments. You must be present to take the tests. No late tests will be accepted unless other arrangements are made with the instructor prior to the start of the test being taken.

ASE Lab Activities: There are 24 lab assignments in total. The signed labs, associated quizzes, and completed work order must be turned in within one class period of completion in order to receive credit. Students submitting labs more than one day after completion must re-demonstrate procedures in the lab to receive credit.

Due to COVID-19 we must comply to the safety standards set by the Center for Disease Control (CDC), our Governor, and Linn-Benton Community College. [Wear a mask or face covering](#) indoors at all times. Your mask or face covering must be properly worn (fully covering nose and mouth and tight-fitting). Mesh masks, face shields, or face coverings that incorporate a valve designed to facilitate easy exhalation are not acceptable. If you have a medical condition or a disability that prevents you from wearing a mask or cloth face covering, you must obtain an accommodation from [CFAR \(Center for Accessibility Resources\)](#) to be exempt from this requirement. State guidelines do not limit class size. Physical distancing accommodations can be made upon request and cleaning supplies are also available for personal use.

ASE style Final Exam: The final exam will be held in AT-A 111 at 8:00am on Monday of finals week, December 6th. The questions are based on information from all six learning units. This is a multiple-choice ASE style exam. You must be present to take the tests. No late tests will be accepted unless other arrangements are made with the instructor prior to the start of the exam being taken.

All new Automotive Technology students must complete the [Vehicle Lift Safety & Certification](#) and [Safety & Pollution Prevention](#) sections in order to receive a passing grade in their first year first term Automotive Technology classes. **Before any work can be performed in the shop** you MUST complete the Vehicle Lift Safety & Certification section. The Safety & Pollution Prevention section can be completed throughout your first term.

Important grading options and responsibilities are detailed in the [Class Website](#). All assessment activities must be completed by end of day (5pm) Wednesday, December 13th. You will have your final grade by Friday of finals week.

You will receive one of these letter grades.

A = 90 - 100% B = 80 - 89% C = 70 - 79% D = 60 - 69% F = 59% and below

IN - Incomplete must be contracted with the instructor

W - Withdraw must be entered in WebRunner by the student prior to Sunday, November 15th

Note: the IN and W are non-completion grades for academic standing and financial aid.

For a tuition/fees refund you must officially drop this class prior to Monday, October 5th

Lab Safety: To ensure lab safety no equipment is to be used, or work performed, unless an instructor is present. You may not use a piece of equipment, or perform certain repair procedures, unless you have been specifically trained on that equipment or procedure. If by chance you should fail to properly follow these rules, you will be asked to leave the laboratory environment. Any student who in the instructor's opinion exhibits unsafe behavior, or fails to follow safety precautions, will be asked to leave the lab environment for the day. See the Professional Work Habits section for more safety policies and instructions.

Required Textbook: Automotive Electrical and Engine Performance (Edition 8) ISBN: 9780135224809

LBCC has many **Learning Resources** designed to help you succeed.

- The Automotive Technology website is at www.linnbenton.edu/auto
- Links to resources for all LBCC students <https://www.linnbenton.edu/student-services/index.php>

LBCC email and internet:

You are responsible for all communications sent via Moodle and to your LBCC email account. You are required to use your LBCC provided email account for all email communications at the College. Almost all course communications will be done through Moodle. [Here is a link](#) that shows you how to turn email notifications on in Moodle.

Technology Recommendations:

Students need to have adequate equipment in order to be successful while attending the Automotive Program. Students need to have a device or devices that allow them to:

- Write a paper
- Interact on Zoom/Hangouts
- Watch a streaming video
- Create videos
- Download/upload a document or browser
- Take a test

Standard equipment recommendation

- Broadband internet
- A computer with 256g SSD, 8G RAM, i5 6th gen processor (or equivalent functionality)
- Device with a microphone and speaker
- Device with a camera

Minimum equipment recommendation

- A wifi hotspot
- A computer with 128g SSD, 4G RAM, i3 6th gen processor (or equivalent functionality)
- Device with a microphone and speaker
- Device with a camera

Disability and Access Statement:

LBCC is committed to inclusiveness and equal access to higher education. If you have approved accommodations through the Center for Accessibility Resources (CFAR) and would like to use your accommodations in the class, please talk to your instructor as soon as possible to discuss your needs. If you believe you may need accommodations but are not yet registered with CFAR, please visit the [CFAR Website](#) for steps on how to apply for services or call (541) 917-4789.

Statement of Inclusion:

To promote academic excellence and learning environments that encourage multiple perspectives and the free exchange of ideas, all courses at LBCC will provide students the opportunity to interact with values, opinions, and/or beliefs different than their own in safe, positive and nurturing learning environments. LBCC is committed to producing culturally literate individuals capable of interacting, collaborating and problem-solving in an ever-changing community and diverse workforce.

Title IX Reporting Policy:

If you or another student are the victim of any form of sexual misconduct (including dating/domestic violence, stalking, sexual harassment), or any form of gender discrimination, LBCC can assist you. You can [report](#) a violation of our sexual misconduct policy directly to our Title IX Coordinator. You may also report the issue to a faculty member, who is required to notify the Coordinator, or you may make an appointment to speak confidentially to our Advising and Career Center by calling 541-917-4780.

Public Safety/Campus Security/Emergency Resources:

In an emergency, call 911. Also, call LBCC Campus Security/Public Safety at 541-926-6855 and 541-917-4440. From any LBCC phone, you may alternatively dial extension 411 or 4440. LBCC has a [public safety app](#) available for free. We encourage people to download it to their cell phones. Public Safety also is the home for LBCC's Lost & Found. They provide escorts for safety when needed. Visit them to learn more.

Changes to the Syllabus:

I reserve the right to change the contents of this syllabus due to unforeseen circumstances. You will be given notice of relevant changes in class, through a Moodle Announcement, or through LBCC e-mail.

Important Links:

NC3: <https://www.nc3certs.com/>

Safety & Pollution Prevention: <https://sp2.org>

MOPAR/CAPS: <https://dealerconnect.chrysler.com/>

I have read the syllabus for AU3.317 Electrical and Engine Performance. I understand everything in the syllabus and agree to all the conditions required to attend the Automotive Technology Program.

"X" Number

Printed Name

Signature

Date