Course Syllabus

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Advanced Transportation and Logistics

ATL101: TRANSPORTATION INFORMATION SYSTEMS AND SHOP PRACTICES

Fall 2024

Sections 1290, 1317, 1325

Lecture and Lab:

Room 2329 Lounibos Hall

Room 2360 Lounibos Hall, the “Auto Shop”

Instructors:

David Lemmer (1290)

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Prerequisite:

No prerequisite

Recommended Preparation:

Eligibility for ENGL1A and MATH25 or Equivalents

Course Description:

Students will explore Transportation Information Systems and mobile networks, specialized internal communications network (BUS), diagnostic tools, service information lookup and application, use of basic tools and safety procedures relating to advanced transportation and the advanced transportation repair technician. Topics include careers, employability skills, workplace practices, safety, personal protection, BUS and Data systems for the entry level transportation maintenance technician. Students will be introduced to internal combustion engines: gasoline, diesel, and hydrogen; electric power and alternative fuels; automotive technology; medium and heavy duty trucks; public transportation; agricultural and construction equipment.

Student Learning Outcomes:

At the conclusion of this course, the student should be able to:

1. Demonstrate the correct use of safety procedures utilized by a mobile equipment repair technician
2. Locate and interpret technical manuals from online computerized databases
3. Demonstrate the appropriate use and maintenance of hand, shop, and precision tools

Objectives:

At the conclusion of this course, the student should be able to:

1. Describe the general layout and function of agricultural, construction, light and heavy-duty vehicles, and public transportation equipment components.
2. Summarize general and specific industrial shop safety standards for a repair shop setting.
3. Demonstrate the appropriate use and maintenance of hand, shop, and precision tools.
4. Correctly identify fasteners and evaluate appropriate use for each type.
5. Adequately retrieve and interpret vehicle data, including on-line technical manuals and computerized shop management programs.
6. Describe the environmental issues and choose appropriate procedures for the disposal of hazardous materials.

7. Discuss the mobile equipment repair industry career field and employment opportunities.

Topics and Scope:

I. Introduction to Advanced Transportation
II. Information Systems
III. Vehicle BUS
  A. Controller Area Network (CAN)
  B. Local Interconnect Network (LIN)
  C. Ethernet Consist Network (ECN)
IV. Service Information
V. Diagnostic Tools for Data Acquisition
VI. Career Information
  A. Careers in the advanced transportation industry
  B. Starting a career in the advanced transportation industry
  C. Working as a professional service technician
    1. wages, salaries, and benefits
    2. local and regional opportunities
    3. shop expectations, practices, and routines
  D. Technician certification
VII. Shop Safety Standards and Practices
  A. Fire and disaster procedures
  B. Cleanliness and order in the workplace
  C. Emergency prevention and intervention practices
  D. Proper lifting procedures
  E. Personal safety practices
  F. Environmental health and safety compliance, including hazards
VIII. Use and Maintenance of Hand, Shop, and Precision Tools
  A. Precision measuring tools
  B. Precision torque tools
  C. Hand and shop tools
  D. Tool and equipment maintenance
  E. Hoisting, rigging, and slings
IX. Fasteners and Mechanical Fitting Devices
  A. Appropriate fastener use
  B. Fastening techniques
  C. Fitting application
  D. General torque specifications
X. Bearings, Seals, Lubricants, Gaskets, and Sealants

All topics are covered in the lecture and lab portions of the course.

Representative assignments:

Lecture-Related Assignments:

1. Weekly reading (10-50 pages)
2. Worksheets from reading assignments
3. Notebook with handouts and class notes if assigned by instructor
4. Tests and final exam

Lab-Related Assignments:

1. Lab assignments and worksheets

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skill and/or require students to select, organize and explain ideas in writing. None This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.	**Writing** 0%
Problem solving: Assessment tools, *other than exams*, that demonstrate competence in computational or non-computational problem solving skills. Worksheets from reading assignments	**Problem Solving** 20%
Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams. Lab assignments and worksheets	**Skill Demonstrations** 20%
Exams: All forms of formal testing, *other than skill performance exams*. Tests and final exam	**Exams** 50%
Other: Includes any assessment tools that do not logically fit into the above categories. Notebook	**Other Category** 10%

Follow your grade totals online:

Remember that the midterm and final exams are 40%-60% of your grade. Unless otherwise informed by the instructor, grades are calculated based on total semester points that you have earned. Grades may be adjusted to a class curve, but you are guaranteed the grade listed in the following chart if you attain the point total associated with that grade.

Letter grade A = 90% - 100% (greater than 900 points)

Letter grade B = 80% - 90% (800-899)

Letter grade C = 70% - 80% (700-799)

Letter grade D = 60% -70% (600-699)

Letter grade F = ≤ 60% (less than 600

Note: This is a required class for all other classes in the ATL Certificate and the ATL Associate Degrees. If you do not achieve a letter grade of C or better you will not continue in the ATL program.

Attendance/Tardiness:

Your attendance is expected at all class meetings and tardiness is not acceptable. You are expected to remain in class or lab until the end of class.

Attendance at all classroom and lab sessions is expected. Missing more than 10% of this time can result in being dropped from the class. The TuTh sections meet 33 times. The Monday section only meets 15 weeks this semester! What this means is that ***no more than 1 Monday* class** can be missed and ***no more than 3 TuTH* classes** can be missed!

If you miss more than that, you may be dropped from the roster!

Textbook**:**

Fundamentals of Automotive Technology, 3rd Edition (ebook)

Author: Kirk T. VanGelder

Publisher: Jones & Bartlett Learning

Course Policies:

Cell Phones: Cell phones have limited value while in class or lab. A common employer's shop rule may be no cell phone use during work hours. In this class I am going to say, "no inappropriate use of the phone in class or in lab". If you are observed using your phone inappropriately in class, you may be asked to leave until the end of the next break. Multiple infractions can result in a 2-day suspension.

Note: if you receive an emergency call, please step outside to talk.

Cheating/Plagiarism: Cheating or plagiarism are unacceptable behavior and will result in an immediate 2-day suspension from class for all students involved; no exceptions.

No Smoking Policy: Santa Rosa Junior College is a non-smoking campus. This now includes "vaping". No smoking is allowed anywhere on campus or within 20 feet of the campus.

Class Participation: Your participation in class discussions is recommended and expected. Asking questions is a short cut to knowledge.

Missed Assignments Policy: Missed assignments are discouraged but may be rescheduled with the instructor on a case-by-case basis up to two weeks past the original due date.

Critical Dates

Class Begins:	8/19/2024	Class Ends	12/11/2024
Last Day Add w/o add code:	8/25/2024	Last Day Add with add code:	09/08/2024
Last Day Drop for Refund:	9/01/2024	Last Day for P/NP option:	N/A
Last Day Drop w/o W:	9/08/2024	Last Day Drop with W:	11/17/2024
First Census Date:	9/09/2024	Date Final Exam:	12/16/2024

Projects In The Shop

Lab Safety:

Safe procedures take precedence over everything else in our shop! Safe clothing must be worn at all times. Safety glasses must be worn when working on projects in the shop. If it cannot be done safely, **don't** do it. If you have any doubt, ask the instructor. If you find yourself struggling for more than a few

minutes, there is likely a tool for that or some trick of the trade. Please don't hesitate to ask, I am more than happy to share those with you.

Student Conduct:

We will conduct ourselves in a manner that reflects our awareness of common standards of decency and the rights of others. All students are expected to know the Student Conduct Code (http://www.santarosa.edu/for_students/rules- regulations/scs/ section1.shtml) and adhere to it in this class. Students who violate the code may be suspended from 2 classes and referred to Vice President of Student Services for discipline.

Respect:

The best way to learn is through active participation; therefore, we respect others when talking by being on time, listening actively, and by being polite even when we disagree with another's viewpoint. Please turn off all electronic devices. If you use a laptop for note taking, please sit in the front row with the sound off. No food in class please.

Academic Integrity:

All written work is to be original; plagiarism of any kind will result in a failing grade on that assignment. Students who plagiarize or cheat may be suspended [for one or two class meetings by the instructor] and referred to the Vice President of Student Services for discipline sanction, in cases of egregious violation. Please read the college policy/procedure on academic integrity at: **http://www.santarosa.edu/polman/ (http://www.santarosa.edu/polman/)** 3acadpro/3.11P.pdf

Emergency Evacuation Plan:

In the event of an emergency during class that requires evacuation of the building, please leave the class immediately, but calmly. Our class will meet at the south end of Lounibos Hall in the parking lot to make sure everyone got out of the building safely and to receive further instructions. If you are a student with a disability who may need assistance in an evacuation, please see me during my office hours as soon as possible so we can discuss an evacuation plan.

Accommodations for Students with Disabilities:

If you need disability related accommodations for this class, such as a note taker, test-taking services, special furniture, etc., please provide the Authorization for Academic Accommodations (AAA letter) from the Disability Resources Department (DRD) to the instructor as soon as possible. You may also speak with the instructor privately during office hours about your accommodations. If you have not received

authorization from DRD, it is recommended that you contact them directly. DRD is located in Analy Village on the Santa Rosa campus, and Jacobs Hall on the Petaluma Campus.

This syllabus is intended to give the student guidance in what may be covered during the semester and will be followed as closely as possible. However, the instructor reserves the right to modify, supplement and make changes as course needs arise.

Pedagogical Philosophy

My philosophy is to provide you with the basic science and theory behind all the automotive systems covered in class. In addition, I will give you practical, hands-on tips for being a successful automotive technician. Ultimately, my goal is to empower you to think for yourselves to create problem solving techniques that you can use in any situation for the rest of your lives. Key to success here is communication, cooperation, creativity, and a desire for excellence. Automotive technology is evolving as rapidly now as it ever has. Keeping up with that promises to be as rewarding as it is challenging. I promise to be your partner and mentor as you begin your trek down this path.

This syllabus is an agreement. Continued participation in this class means that you agree to the policies and procedures outlined in this syllabus.