SAN JUAN COLLEGE
Success Matters

AUTE-113-AUTOMOTIVE ELECTRICAL SYSTEMS 5 CREDITS

SYLLABUS

CATALOG DESCRIPTION

Basic fundamentals of electrical theory, magnetism, current flow, Ohm's Law, series, parallel, and series-parallel circuit calculations. The use of basic meters and their application to circuit diagnosis will be taught. Diagnosis of the general electrical system to include battery, starting, charging, lighting, gauges, horn, wiper/washer, and accessories using meters and schematics with standard troubleshooting procedures. Safety is emphasized.

Corequisite: AUTE-110

Semester Offered: Fall and Spring

COMMON STUDENT LEARNING OUTCOMES

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in…

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

COURSE LEARNING OUTCOMES

Upon successful completion of the course, the student will be able to…

1. Complete 100% of NATEF priority 1 tasks.
2. Complete 85% of NATEF priority 2 tasks.

3. Complete 75% of NATEF priority 3 tasks.

SPECIFIC LEARNING OUTCOMES

Upon successful completion of the course, the student will be able to…

1. Work with automotive electrical systems in a manner consistent with established safety procedures.
2. Demonstrate knowledge of electrical fundamentals by properly using an amp, volt, and ohm meter (digital and analog.)
3. Diagnose circuits which have conditions such as: shorts, opens and grounds.
4. Inspect electrical connections and repair them using accepted manufacturer procedures.
5. Test specific gravity of a battery.
6. Perform a load test on a battery.
7. Properly charge a battery.
8. Perform a starter amp draw test.
9. Perform a voltage drop test on a starter system.
10. Perform a charging system output test.
11. Repair a no charge complaint.
12. Repair a starter.
13. Calculate unknowns in Ohm's Law, given two values and the type of circuit.
14. Demonstrate knowledge of the difference between DC and AC and list sources of each.
15. Test and locate malfunctions in electric circuits common to automotive systems.
16. Read schematic diagrams and sketch schematics of actual circuits.