SAN JUAN COLLEGE
Success Matters

ENER-1320-BASIC ENGINE THEORY 3 CREDITS

SYLLABUS

CATALOG DESCRIPTION

This course introduces students to the basic concepts of the internal combustion engine and its subsystems, to include air, fuel and ignition systems and how they work together to produce normal combustion. Internal combustion engines: combustion characteristics, lean burn and rich burn engines, 3 major components required for combustion.

Prerequisites: None

Semester Offered: All

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. Identify basic engine parts.
2. Discover how internal combustion engines work.
3. Develop knowledge of the sequence of events in 2 cycle and 4 cycle engines.

4. Identify engine malfunctions.
5. Recognize and understand basic engine terminology as related to natural gas compression.
6. Determine the different characteristics of a 2 cycle and a 4 cycle engine.
7. Troubleshoot abnormal situations that occur in natural gas engines.
8. Develop optimization skills to improve efficiencies of gas engines.
9. Understand the differences of lean burn and rich burn engines.