

## SYLLABUS

**DATE OF LAST REVIEW:** 4/23/2020  
**CIP CODE:** 47.0613  
**SEMESTER:** Departmental Syllabus  
**COURSE TITLE:** Engine Performance  
**COURSE NUMBER:** DEVT 0115  
**CREDIT HOURS:** 2  
**INSTRUCTOR:** Departmental Syllabus  
**OFFICE LOCATION:** Departmental Syllabus  
**OFFICE HOURS:** Departmental Syllabus  
**TELEPHONE:** Departmental Syllabus  
**EMAIL:** Departmental Syllabus  
*KCKCC-issued email accounts are the official means for electronically communicating with our students.*

**PREREQUISITES:** None

**REQUIRED TEXT AND MATERIALS:** Please check with the KCKCC bookstore, <http://www.kkcccbookstore.com> for the required text for your particular class.

**COURSE DESCRIPTION:** Engine Performance covers the engine control and emission control systems such as fuel injection, air induction, exhaust, exhaust gas treatments\filters utilized on light, medium and heavy diesel trucks. Students are introduced industry standard diagnostic equipment and tools.

**METHOD OF INSTRUCTION:** A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

### **COURSE OUTLINE:**

- I. Introduction to diesel engines
- II. General diesel engine diagnostics
- III. Cooling System
  - A. Test coolant temperatures.
  - B. Diagnose engine coolant consumption.

#### IV. Air Induction and Exhaust Systems

- A. Diagnose problems in EGR (exhaust gas recirculation system).
- B. Perform air intake system restriction and leakage tests.
- C. Perform intake manifold pressure (boost) test.
- D. Check exhaust back pressure.
- E. Diagnose exhaust aftertreatment system performance problems.

#### **EXPECTED LEARNER OUTCOMES:**

- A. The student will be able to describe diesel engines.
- B. The student will be able to diagnose diesel engine problems.
- C. The student will be able to describe the diesel engine cooling system.
- D. The student will be able to diagnose the diesel engine cooling system problems.
- E. The student will be able to describe air induction and exhaust systems.
- F. The student will be able to diagnose problems in EGR (exhaust gas recirculation system).

#### **COURSE COMPETENCIES:**

Upon successful completion of this course:

1. *The student will be able to describe diesel engines.*  
The student will be able to demonstrate knowledge of diesel engines
2. *The student will be able to diagnose diesel engine problems.*  
The student will be able to understand diesel engine problems.
3. *The student will be able to describe the diesel engine cooling system.*  
The student will be able to demonstrate knowledge of diesel engine cooling systems and their components.
4. *The student will be able to diagnose the diesel engine cooling system problems.*  
The student will be able to test coolant temperatures.
5. The student will be able to diagnose coolant consumption problems.
6. *The student will be able to describe air induction and exhaust systems.*  
The student will be able to demonstrate knowledge of air induction and exhaust systems.
7. *The student will be able to diagnose problems in EGR (exhaust gas recirculation system).*  
The student will be able to perform air intake system restrictions and leakage tests
8. The student will be able to diagnose aftertreatment system performance issues.

**ASSESSMENT OF LEARNER OUTCOMES:** Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation.

#### **SPECIAL NOTES:**

This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in

evaluating the student's progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college's policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center, in Rm. 3354 or call at: 288-7670.