# Small Engines & Powertrains I Course No. 40212 Credit: 0.5

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| **Student name:** |  | **Graduation Date:** |  |

Pathways and CIP Codes: **Vehicle Maintenance & Repair (47.0600)**

Course Description: A comprehensive, **technical level** course to instruct students in the knowledge and skills common to all small engine operations and repair.

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

## Benchmark 1: careers and safety

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Demonstrate and apply safe working practices with tools and machine needed for removal and repair of small gas engines. |  |
| 1.2 | Demonstrate and apply safe work practices as outlined in OSHA and EPA guidelines. |  |
| 1.3 | Research and explore careers and educational opportunities in the small engine repair field |  |

Benchmark 2: powertrain operation

Competencies

| # | DESCRIPTION | RATING |
| --- | --- | --- |
| 2.1 | Explain and demonstrate a working knowledge of engine systems on 2- and 4-stroke cycle engines. |  |
| 2.2 | Demonstrate Knowledge of Engine diagnostics and determine necessary action for repair |  |
| 2.3 | Research manufacturer’s service information, service precautions, and procedures that are applicable to the machine |  |
| 2.4 | Compare and contrast various types of transmissions and drive systems. |  |
| 2.5 | Demonstrate Knowledge of primary drive mechanisms. |  |
| 2.6 | Describe and explain the principles of multiple cylinder engines. |  |

Benchmark 3: Engine repair and diagnosticts

Competencies

| # | DESCRIPTION | RATING |
| --- | --- | --- |
| 3.1 | Demonstrate knowledge of the various types of gaskets, sealers, and thread lockers and their usages~~.~~ |  |
| 3.2 | Demonstrate Knowledge to disassemble and reassemble an engine. |  |
| 3.3 | Demonstrate Knowledge of Removal and installation of an engine. |  |
| 3.4 | Explain the principles of electricity as they pertain to small engines and powertrains. |  |
| 3.5 | Demonstrate advanced troubleshooting techniques. |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

CTE Pathways Help Desk

(785) 296-4908

[pathwayshelpdesk@ksde.org](mailto:pathwayshelpdesk@ksde.org)



900 S.W. Jackson Street, Suite 102

Topeka, Kansas 66612-1212

[https://www.ksde.org](https://www.ksde.org/)

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