# Mechanical Power Transmission Systems Course No. 13302 Credit: 0.5

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

Pathways and CIP Codes:Aviation Maintenance (47.0608) - Airframe Strand; Energy (17.2071); **Manufacturing (48.0000) - Maintenance Strand**

Course Description: **Technical Level:** A technical level course designed to provide students with knowledge and skills needed to adjust, maintain, and repair parts of machinery and equipment. Includes preventive maintenance, flexible drives, couplings, alignment, bearings/shafts/seals, gears, and cams. (SCED: Equipment Maintenance and Repair courses prepare students to adjust, maintain, replace, and repair parts of machinery and to repair tools, equipment, and machines. The courses may have a general emphasis or may focus on a specific type of machinery or equipment related to a particular industry. Depending upon the intent, course topics may include electric, hydraulic, pneumatic, or mechanic systems; programmable logic and motor control devices, valves, and gates; or supplemental equipment such as fans, hoses, and pipes.)

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: Preventative Maintenance

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Demonstrate proper safe practices when doing general preventative maintenance. |  |
| 1.2 | Collect and interpret oil samples. |  |
| 1.3 | Perform equipment checks. |  |
| 1.4 | Identify various types and styles of predictive and preventative maintenance components, principles, and practices used in Industrial applications. |  |

## Benchmark 2: Flexible Drives

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.1 | Describe safety precautions for performing maintenance of flexible drives and chain systems. |  |
| 2.2 | Describe characteristics of flexible drive systems. |  |
| 2.3 | Identify different types of industrial belts. |  |
| 2.4 | Identify common types and styles of chain drive systems. |  |

## Benchmark 3: Couplings and Alignments

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 3.1 | Demonstrate safe practices when working with couplings. |  |
| 3.2 | Name types and functions of couplings used in mechanical systems. |  |
| 3.3 | Align various types of couplings using a straight edge and feeler gauge. |  |

## Benchmark 4: Bearings, Shafts, and Seals

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 4.1 | Demonstrate proper safe practices when working with shafts. |  |
| 4.2 | Identify different types of industrial bearings. |  |
| 4.3 | Identify different types of industrial seals and their functions. |  |

## Benchmark 5: Gears and Cams

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 5.1 | Describe proper safety precautions for performing maintenance on mechanical systems. |  |
| 5.2 | Describe purpose and function of gears and gear drives. |  |
| 5.3 | Explain the functions of seals and breathers. |  |
| 5.4 | Describe the purpose and types of lubrication essential for gear life. |  |
| 5.5 | Describe the basic types of industrial cams. |  |

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/)

The Kansas State Department of Education does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities and provides equal access to any group officially affiliated with the Boy Scouts of America and other designated youth groups. The following person has been designated to handle inquiries regarding the nondiscrimination policies: KSDE General Counsel, Office of General Counsel, KSDE, Landon State Office Building, 900 S.W. Jackson, Suite 102, Topeka, KS 66612, (785) 296-3201.