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

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| --- | --- | --- | --- |
| **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

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