Common Course Outline

EMET 250

Power Transmission Equipment

3 Semester Hours

The Community College of Baltimore County

Description

EMET 250 – 3 Credits - Power Transmission Equipment
presents the components and operation of complex mechanical equipment used in manufacturing, through practical lab experiences. Students perform assembly, fitting, and alignment tasks during the lab portion of the class. The course extends knowledge of basic mechanics to provide students with a broad understanding of the operation of power transmission equipment. The types of power transmissions covered in this class include belt drives, chain drives, gears and gear drives, adjustable speed drives, shaft alignment, shaft coupling devices and clutches and brakes. Students apply mastered concepts to perform an alignment.
3 Credits: 2 hours of lecture per week; 2 hours of lab per week
Pre/Co-requisites: EMET 105 - Technical Blueprints and Schematics and EMET 125 – Mechanics and Maintenance Fundamentals.

Course Objectives

Upon successful completion of this course the student will be able to:

1. explain the construction and function of several types of belt drives;
2. install and adjust belt drives;
3. discuss the terminology, variations in structure, and functions associated with chain drives;
4. install and adjust chain drives;
5. align and maintain common gear types & set backlash;
6. cite variations in design and methods used to install and maintain common types of gear drives;

7. align, strip and assemble a gear shaft;
8. classify shaft coupling devices by structure and function;
9. fit a key to a coupling;
10. align fast's coupling;
11. distinguish types of clutches and brakes; and
12. apply knowledge acquired during class lecture to perform a full alignment.

Major Topics

I. Belt and Chain Drives
II. Gears and Gear Drives
III. Shaft Alignment
IV. Shaft Coupling Devices
V. Clutches and Brakes
VI. Chain and Sprocket/Belt and Pulley
VII. Gear Shaft Stripping and Assembly
VIII. Coupling Key Fit and Gear Alignment
IX. Fast's Coupling Alignment

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member and will be provided on the first day of class.

The following will be required for this course:

1. Written paper or suitable practical project
2. Midterm exam
3. Comprehensive final (including a practical exam).

In addition, students can expect grades from the following areas:

4. Quizzes
5. Lab Projects
6. Homework Assignments.

Other Course Information

EMET 250 - Power Transmission Equipment is an elective course in the Mechanical Engineering Technology Option under the Engineering Technology A.A.S. It is taught in a classroom and/or lab environment, and includes hands-on activities which allow students to apply the knowledge they acquire during lecture sessions.