GRANDE PRAIRIE REGIONAL COLLEGE
Industrial Training

Industrial Maintenance Technician Program

COURSE SYLLABUS - SEMESTER II

SHOP PRACTICE II: IM0061

The shop practice course is designed to provide the students with practical experience in applying trade-related skills. Emphasis will be placed on the hands-on approach to allow students to perform actual maintenance procedures. Wherever possible actual industrial equipment will be assessed and repaired.

Prerequisites: IM0061
Textbooks: See Trade Theory I Syllabus
Class Hours: See Timetable

Course Objectives

Bearings and Lubrication

Shop work will include an effective working knowledge and use of bearings.

Upon completion of this unit, students will be able to:

1. effectively demonstrate mounting and dismounting procedures.
2. perform mounting and dismounting procedures.
3. demonstrate bearing component assembly and disassembly.
4. perform applications of lubrication to machinery and bearings.

Lubrication

Shopwork will include the correct selection and application of lubricants as required.

Upon completion of this unit students will be able to:

1. demonstrate the types of lubricant applicators.
2. describe the amount and types of lubricants for specific applications.

Couplings

Shop work will include the installation and alignment of various couplings in a related shop project.

Upon completion of this unit, students will be able to:

1. demonstrate coupling mounting and dismounting procedures.
2. explain coupling alignment procedures.

Brakes and Clutches

In this unit the student will examine clutch and brake operating mechanisms an identify applicable maintenance procedures.

Upon completion of this course, students will be able to:

1. demonstrate clutch mounting and dismounting procedures.
2. explain clutch maintenance and alignment.
3. illustrate methods of brake applications.
4. display brake installation and maintenance procedures.

Alignment

This unit will demonstrate the process for cross dialing alignment procedures.

Upon completion of this course, students will be able to:

1. perform a cross dialing procedure, using graph methods.

Power Transmissions

Shop work will give experience in the installation, alignment, and assembly of a specified shop project. It will include assembling a chain and belt drive unit. Emphasis will be placed on gear backlash, end float and lubrication.

Upon completion of this unit, students will be able to:

1. demonstrate chain and sprocket mounting and alignment procedures.
2. demonstrate belt and chain tensioning.
3. describe gear backlash.

Gears and Speed Changers

In this unit students will work with gear, splines, gear boxes and speed changers.

Upon completion of this unit, students will be able to:

1. demonstrate and perform gear and speed changer maintenance and overhaul procedures.
2. demonstrate ability to check and set gear mesh, gear backlash and bearing settings.
3. demonstrate and perform gear box assembly, disassembly and servicing techniques.

Reciprocating Compressors

Shop work will look at compressor preventative maintenance techniques including safety blocking and purging. It will look at applications of compressor components.

Upon completion of this course, students will be able to:

1. practise safety rules
2. explain applications of compressor components.
3. demonstrate and perform unloading procedures.
4. demonstrate compressor safety blocking and purging procedures.
5. demonstrate and perform dismantling and installation of compressor components.
6. apply compressor preventative maintenance techniques.

Gaskets

This unit will look at installation criteria of gaskets, packing and seals.

Upon completion of this course, students will be able to:

1. practise safety procedures.
2. demonstrate installation procedures for packing and seals.

Hydraulics

This unit will teach students the components of hydraulic systems. Students will increase their working knowledge of hydraulic circuits and schematics.

Upon completion of this unit, students will be able to:

1. demonstrate safe shop working procedures including personal safety equipment usage.
2. perform safe shop working procedures including personal safety equipment usage.
3. identify the basic hydraulic components.

Evaluation

The students will be evaluated on shop projects, as follows.

1. Bearing and Bushing (installation, removal) 10%
2. Coupling Installation 5%
3. Alignment of Couplings (graph) 15%
4. Power Transmission (set-up) 25%
   a. safety lock
   b. belts
   c. chains
   d. clutches
   e. maintenance and planning procedures
   f. setup, organization and planning
5. Compressors 10%
   a. single acting
   b. double acting
6. Gaskets, Packing and Seals 5%
7. Hydraulic Component (set-up) 15%
8. Work Habits and Ethics 10%
9. Catalogue Manual Data ..... 5 %

   Total 100%

Attendance

Refer to the Attendance Policy - Progression Criteria