Wharton County Junior College

Academic Master Syllabus

Course Information

Course Title	Pumps, Compressors, and Mechanical Drives
Course Prefix, Num. and Title	INMT 2303
Division & Department	Vocational Science: Manufacturing Technology
Course Type	WECM Course
Course Catalog Description	A study of the theory and operations of various types of pumps and compressors. Topics include mechanical power transmission systems including gears, v-belts, and chain drives. The course also involves bearings, lubrication, valves, reducers, key/keyways, alignment, vibration, and other mechanical topics.
Pre-Requisites	TSI requirements met.
Co-Requisites	None

Semester Credit Hours

Total Semester Credit Hours	3
Lecture Hours	2
Equated Pay Hours	4
Lab/Other Hours	4
Lab/Other Hours Breakdown: Lab Hours	4
Lab/Other Hours Breakdown: Clinical Hours	Enter Clinical Hours Here.
Lab/Other Hours Breakdown: Practicum Hours	Enter Practicum Hours Here.
Other Hours Breakdown	4

Approval Signatures

Title	Signature	Date
Prepared by:	Gerald Kinder Digitally signed by Gerald Kinder Date: 2020.08.13 11:57:20 -05'00'	
Department Head:	Gerald Kinder Digitally signed by Gerald Kinder Date: 2020.08.13 11:57:39 -05'00'	
Division Chair:	Timothy Guin Digitally signed by Timothy Guin DN: cn=Timothy Guin, o=Division Chair, ou=VOCS, email=guint@wcjc.edu, c=US Date: 2020.08.13 13:16:02 -05'00'	
Dean/VPI:	Paul J. Quinn Digitally signed by Paul J. Quinn Date: 2020.08.14 10:38:25 -05'00'	
Approved by CIR:	Paul J. Quinn Digitally signed by Paul J. Quinn Date: 2020.08.14 10:38:41 -05'00'	

Additional Course Information

Topical Outline: Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

Topical Outline -> Dedicated Instructional Time
- IMTME002-GCU -> Bearings -> 16 Hrs .
- IMTME003-GCU -> Brakes -> 8 Hrs .
- IMTME004-GCU -> Centralized lubrication -> 12 Hrs .
- IMTME031-GCU -> Gear box reducers -> 12 Hrs .
- IMTME016-GCU -> Key and Keyways, Seals and Bearings Families -> 16 Hrs .
- IMTME029-GCU -> Mechanical Transmissions -> 16 Hrs .
- Pumps, Compressors, and Mechanical Drives
- Special topics /technical overview -> 12 Hrs.

Lab: This course will feature hands-on lab to enhance the lectures.

Course Learning Outcomes:

Learning Outcomes – Upon successful completion of this course, students will:

1. Apply installation, maintenance concepts, and procedures related to the following topics:
    A. Bearings
    B. Brakes
    C. Centralized lubrication
    D. Gear box reducers
    E. Key and Keyways, Seals and Bearings Families.
    F. Mechanical Transmissions.
2. Identify principles of operation of centrifugal, and positive displacement pumps and compressors.
3. Identify and explain the function of various components in pumps and compressors
4. Disassemble and correctly reassemble pumps, compressors, and mechanical drives.
5. Troubleshoot pumps, compressors and mechanical drives.

Methods of Assessment:

Periodic written quizzes and exams. Hands-on laboratory assessments.Exam / hands-on performance analysis will be performed to identify weaknesses in the program.

Required text(s), optional text(s) and/or materials to be supplied by the student:

Industry hand-outs and selected text.

Suggested Course Maximum:

20

List any specific or physical requirements beyond a typical classroom required to teach the course.

Associated lab requirements.

Course Requirements/Grading System: Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

1.Quizzes, homework, assignments, and class participation – 25%
2.Lab, and cross disciplinary skills (work ethic, safety, teamwork, housekeeping, attitude). – 25%
3.Mid-term exam – 25%

4.Final Exam – 25%

Grading
A – 100-90
B – 89-80
C – 79-70

Curriculum Checklist:

☐**Academic General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.

☐**Academic WCJC Core Course**. Attach the Core Curriculum Review Forms

- ☐Critical Thinking
- ☐Communication
- ☐Empirical & Quantitative Skills
- ☐Teamwork
- ☐Social Responsibility
- ☐Personal Responsibility

☒**WECM Course** -If needed, revise the Program SCANS Matrix and Competencies Checklist