Wharton County Junior College

Academic Master Syllabus

Course Information

Course Title	Hydraulics, Fabrication, & Repair
Course Prefix, Num. and Title	HYDR 1450
Division & Department	Vocational Science: Manufacturing Technology
Course Type	WECM Course
Course Catalog Description	Fabricate power units, to provide fluid power for an industrial or mobile operation. Includes techniques and methods of constructing conduits and fittings. The course will also include a study of hydraulic fundamentals accessories, pumps, motors, actuators, and pneumatics.
Pre-Requisites	TSI requirements met.
Co-Requisites	None

Semester Credit Hours

Total Semester Credit Hours	4
Lecture Hours	3
Equated Pay Hours	4.5
Lab/Other Hours	3
Lab/Other Hours Breakdown: Lab Hours	3
Lab/Other Hours Breakdown: Clinical Hours	Enter Clinical Hours Here.
Lab/Other Hours Breakdown: Practicum Hours	Enter Practicum Hours Here.
Other Hours Breakdown	3

Approval Signatures

Title	Signature	Date
Prepared by:	Gerald Kinder Digitally signed by Gerald Kinder Date: 2020.08.13 11:54:50 -05'00'	
Department Head:	Gerald Kinder Digitally signed by Gerald Kinder Date: 2020.08.13 11:55:11 -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 13:18:02 -05'00'	
Dean/VPI:	Paul J. Quinn Digitally signed by Paul J. Quinn Date: 2020.08.14 10:35:53 -05'00'	
Approved by CIR:	Paul J. Quinn Digitally signed by Paul J. Quinn Date: 2020.08.14 10:36:12 -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
- IMTHP004-GCU -> Hydraulics Fundamentals -> 16 Hrs .
- IMTHP002-GCU -> Hydraulic accessories and actuators -> 12 Hrs.
- IMTHP009-GCU -> Air, water and gas valves -> 12 Hrs .
- IMTHP006-GCU -> Directional valves -> 12 Hs
- IMTHP008-GCU -> Hydraulic Pumps and Motors -> 16 Hrs .
- IMTHP005-GCU -> Oleodynamic control valves -> 20 Hrs .
- IMTHP007-GCU -> Pneumatic -> 8 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 technical skills in the following topics:
    A. Hydraulics Fundamentals
    B. Hydraulic accessories and actuators
    C. Air, water and gas valves
    D. Directional valves
    E. Hydraulic Pumps and Motors
    F. Oleodynamic control valves
    G. Pneumatics
2. Demonstrate fabrication/assembly of power units.
3. Interpret blueprints and specifications.
4. Demonstrate disassembly, repair, and reassembly of hydraulic components.
5. Analyze failed components.

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