

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

_____ Transfer course X_____ A.A. degree applicable course

(check all that apply)

COURSE NUMBER AND TITLE: DMT 81 Basic Hydraulics

UNIT VALUE: 3 units

MINIMUM NUMBER OF SEMESTER HOURS: 96 hours

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS:

PREREQUISITE: None

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

Basic hydraulic system principles and service. Topics of study include hydraulic theory, safety requirements, hydraulic diagrams and ISO symbols, component operation, service and repair troubleshooting and test equipment usage.

SPECIFIC COURSE OBJECTIVES:

The students will:

1. Be able to practice and describe special safety requirements when working with hydraulic systems and their components.
2. Be able to identify all hydraulic components and explain their function.
3. Be able to practice and describe correct hydraulic maintenance procedures and adjustments.
4. Be able to operate major hydraulic components.
5. Be able to read hydraulic schematics.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

Basic Hydraulics Outline

- I. Safety
 - A. Safety requirements when working with hydraulics.
 - B. Safety equipment and their correct usage.
- II. Hydraulic theory
 - A. Pressures, forces, and flow principles.
 - B. Formulas and their usage.
- III. Hydraulic maintenance
 - A. Correct hydraulic maintenance procedures.
 - B. Minor adjustments to system operation to maintain optimum performance.
 - C. Hydraulic fluids and their correct usage.
- IV. System components
 - A. Identification.
 1. Identify all hydraulic components.

- 2. Explain the function of each.
- B. Hydraulic system checks and adjustments.
 - 1. Pressure testing
 - 2. Leak checking
 - 3. Flow testing
 - 4. Electrical testing
- C. Operation and repair
 - 1. Operation of each component
- V. Hydraulic schematics
 - A. Symbols
 - 1. ISO formatting
 - 2. Pictorial drawings
 - B. Reading hydraulic flow
- VI. Technical references
 - A. Materials
- VII. Hydraulic troubleshooting
 - A. Service manual flow charts
 - B. Diagnostic equipment
 - 1. Flow meter
 - 2. PSI gauges
 - 3. Pyrometer
 - 4. Dye-glow

REQUIRED READING:

Melroe Company, Hydraulic Manual.
 Gwinner, ND: Melroe Company, 1996.

SUGGESTED READING:

None

REQUIRED WRITING:

Students are required to perform written and computer laboratory task assignments.

OUTSIDE ASSIGNMENTS:

Students are expected to read text assignments, study lecture/laboratory notes, and develop a research project that is hydraulic in nature.

INSTRUCTIONAL METHODOLOGY:

Instructional aids will include power-point presentation, cut-a-way components, VCR tapes, and laboratory components as identified in sections 55761-55763, and 58161 of Title 5 Division 2.

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

This course may be offered as a distance education course and meets Title 5 regulations 55370, 55372, 55374, 55378, and 55380.

Yes No

If yes, check all that apply. (see guidelines for preparation for definitions.)

- telecourse
- mediated instruction
- computer assisted instruction

GRADING POLICY AND STANDARDS:

Exams	30%
Lab Assignments	60%
Research Project	10%

IS COURSE REPEATABLE FOR REASONS OTHER THAN DEFICIT GRADE:

Yes No Number of times it may be taken for credit: 2

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