



MASTER COURSE OUTLINE

Prepared By: Bill Autry

Date: June 2014

COURSE TITLE

Pumping Hydraulics & Mechanics

GENERAL COURSE INFORMATION

Dept.: IST

Course Num: 284

(Formerly:)

CIP Code: 47.0303

Intent Code: 21

Program Code: 768

Credits: 5

Total Contact Hrs Per Qtr.: 77

Lecture Hrs: 33

Lab Hrs: 44

Other Hrs:

Distribution Designation:

COURSE DESCRIPTION (as it will appear in the catalog)

This course explores the fundamentals of pump system characteristics, hydraulic principles, and pumping technology; including various designs, pump seals, lubrication, & mechanical maintenance.

PREREQUISITES

IST 280 or Instructor Permission

TEXTBOOK GUIDELINES

Appropriate textbook as determined by faculty (Example: *Pumps series-735*, Schoolcraft)

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills.

- 1) Explain the basic principals involved pump operations.
- 2) Identify various pump components, their respective applications, and functions.
- 3) Observe the appropriate safety precautions when working with pump equipment.
- 4) Troubleshoot common malfunctions.
- 5) Use proper testing procedures.
- 6) Read and understand pertinent schematic drawings and data tables.

INSTITUTIONAL OUTCOMES

COURSE CONTENT OUTLINE

- 1) Pumping Applications
- 2) Pumping and Piping Hydraulics
- 3) Types of Pumps
 - a) End Suction Centrifugal
 - b) Propeller & Turbine
 - c) Rotary
 - d) Reciprocating
 - e) Metering

- f) Special Purpose
- 4) Packing & Seals
- 5) Maintenance & Troubleshooting Procedures

DEPARTMENTAL GUIDELINES *(optional)*

DIVISION CHAIR APPROVAL

DATE