THREE RIVERS COMMUNITY-TECHNICAL COLLEGE
COURSE OUTLINE
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Course Number/Title: MEC K272 Fluid Mechanics/Thermodynamics

Lecture 4 hrs   Laboratory 0 hrs   Credit 4 hrs   Contact 4 hrs

Course Description: To investigate the behavior of fluids from a fluid
mechanics and thermodynamics point of view.

Method: Lecture

Text: Applied Fluid Mechanics, Mott; Introduction to Engineering
Thermodynamics, Sonntag

Prerequisites:PHY K115_____   Co-Requisites:_____

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COURSE TOPICS/CONTENT

                                                            HOURS
A. FLUID PROPERTIES
     Pressure head, buoyancy, flow velocity   10

B. CONSERVATION OF ENERGY
     Bernoulli's equation, venturi, orifice, flow devices,
     falling head   10

C. CONTINUITY EQUATION
     Conservation of mass, velocity relationships   10

D. PIPE FLOW
     Viscosity, Reynold's number, flow losses, branch pipes 10

E. ENERGY EQUATION OF GASES
     Constant pressure, volume, temperature, adiabatic processes   9

F. BASIC ENGINE CYCLES
     Compressed air, internal combustion cycle, gas turbine, steam
     processes, refrigeration   11

                             TOTAL HOURS   60

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Program Coordinator: *Robert Lantz*

Department Chairperson: *Tony Benoit*

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Measurable Objectives

THE STUDENT WILL:

1. Be able to determine pressures, velocities and buoyancy
    of static fluids

2. Be able to apply continuity and energy equations to a
    variety of flow situations

3. Be able to determine pipe head loss due to friction flow
    problems

4. Be able to analyze engine cycles that involve constant
    pressure, temperature, volume or entropy. Also to
    understand the perfect gas laws.