

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number: CIVL 235 Department: Civil Engineering Technology

Course Title: Hydraulics and Hydrology Semester: Spring Year: 1997

Objectives/Competencies

Course Objective	Competencies
1. Develop engineering analytical skills, and relate them to fluid systems.	1. Sketch a problem, identify the governing equations, and make all necessary unit conversions. 2. Properly solve the equations using proper units.
2. Introduce physical concepts of hydrostatic pressure, hydrostatic forces, continuity, energy, and energy losses.	1. Determine pressures and forces on flat surfaces for a variety of fluids. 2. Solve flow problems solving for velocities flow rate, and determine pipe size. 3. Size a pump in a real flow system where all energy losses are considered.
3. Familiarize the student with closed conduit flow systems and their components.	1. Learn the function of different types of valves. 2. Design a pipe system with valves properly located. 3. Use different types of pipe in system design.

Course Objective	Competencies
4. Teach hydrologic theory related to rainfall, runoff, and analytical prediction techniques.	<ol style="list-style-type: none">1. Use the rational method to determine peak flow.2. Use TR-55 to do rainfall and runoff analysis; also size a detention basin.3. Learn basic hydrologic concepts doing hydrograph analysis, including determination of surface runoff coefficients.