

1. *Course number and name*
ENGR 468: Applied Fluid Mechanics and Hydraulics

2. *Credits and contact hours*
3 credit hours; two 75-minutes or three 50-minutes lecture per week.

3. *Instructor's or course coordinator's name*
Instructor: Dragomir Bogdanic, Instructor
Course coordinator: Elahe Enssani, Associate Professor

4. *Text book, title, author, and year*
 - Chin, D. A. *Water Resources Engineering*, 3rd edition, Prentice Hall, 2011.

d. other supplemental materials
Additional references:

 - D. F. Elger, B. A. LeBret, C. T. Crowe, and J. A. Roberson. *Engineering Fluid Mechanics*, 11th ed., John Wiley & Sons, Inc., 2016.

5. *Specific course information*
 - j. brief description of the content of the course (catalog description)*
Fluid mechanics: incompressible flow to steady and transient flow problems in piping networks, turbo-machines, and open channels.

 - k. prerequisites or co-requisites*
ENGR 304

 - l. indicate whether a required, elective, or selected elective course in the program*
Elective for Civil Engineering; elective for Mechanical Engineering

6. *Specific goals for the course*
 - e. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.*
 - The student will be able to specify appropriate pumps for piping systems based upon pump and system curves
 - The student will be able to analyze and design pipe networks
 - The student will be able to understand the characteristics and basic design considerations associated with turbo-machines
 - The student will be able to analyze and design open channels
 - The student will be able to carry out analysis of surface-water hydrology

 - f. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.*

Course addresses ABET Student Outcome(s): a, c, e, k.

7. *Brief list of topics to be covered*

- Review of fluid mechanics
- Flow in closed conduits
- Multiple pipelines
- Pumps
- Flow in open channels
- Water surface profiles
- Hydraulic structures
- Surface-water hydrology