



WISCONSIN

UNIVERSITY OF WISCONSIN-MADISON

University of Wisconsin - Madison
College of Engineering [EGR]
Last Offered: 2015 Spring [1154]
Direct Link to this Syllabus :

<http://aefis.engr.wisc.edu/index.cfm/page/CourseAdmin.ViewABET?coursecatalogid=390&pdf=True>

1. **CIV ENGR 618, Special Topics in Hydraulics and Fluid Mechanics**
2. **Credits : 3 Contact Hours : 2.5**
3. **Textbook and Materials : None required**
4. **Specific Course Information :**

- a. **Brief description of the content of the course (Course Catalog Description) :** Given on demand.
- b. **Pre-requisites or Co-requisites :** Prereq varies with topic

- **Specific Goals for the Course :**

- a. **Course Outcomes :**

1. This is a practical course in the fundamentals and applications of electrochemistry for environmental systems such as batteries and capacitors for load leveling of solar and wind power, solar energy systems, fuel cells, capacitive deionization, environmental sensors, corrosion, etc.

- **ABET Student Learning Outcomes :**

- (c) Ability to design a system, component, or process to meet desired needs.
- (d) Ability to function on multidisciplinary teams.
- (e) Ability to identify, formulate and solve engineering problems.
- (g) Ability to communicate effectively.
- (h) The broad education necessary to understand the impact of engineering solutions in a global and societal context.
- (i) Recognition of the need for and an ability to engage in life-long learning.
- (j) Knowledge of contemporary issues.

- **Brief List of Topics to be Covered :**
 - a) Understand phenomena and mechanisms of erosion, transport, and deposition
 - b) Model processes (how much and how fast) and their effects on flow depth and channel shape
 - c) Develop and apply design protocol (e.g., stable channels, support structures [piers, piles, abutments], flow and sediment control structures)