Spring 2007

CE 466

End-of-Course Survey

Professor JJ Lee

Design of Free-Surface Hydraulic Systems

Course Objectives and Outcomes		How well did you learn? Not at all → Very Well 1 2 3 4 5 — CIRCLE YOUR RATINGS ↓ BELOW ↓
Objective. Students will learn to analyze problems in open channel hydraulics and coastal engineering. **Outcome.** How well did this course increase your ability to understand and/or do the following?		
1	Basic concepts of fluid flow, conservation of mass, energy and momentum	1 2 3 4 5
2	Specific energy and its relationship to critical, subcritical and supercritical flow	1 2 3 4 5
3	Application of specific energy to transitions with change in bed elevation and width	1 2 3 4 5
4	Momentum principle in open channel, hydraulic jump, and concept of specific force	1 2 3 4 5
5	Open channel flow resistance, Manning equation, uniform and non-uniform flow	1 2 3 4 5
6	Design of open channels for uniform flow	1 2 3 4 5
7	Non-uniform flow and water surface profile computation and analysis	1 2 3 4 5
8	Analysis and design of open channel controls, upstream and downstream controls	1 2 3 4 5
9	Analysis and design of open channel transition, junctions, and energy dissipaters	1 2 3 4 5
10	Hydraulic analysis and design of culverts and inverted siphones	1 2 3 4 5
11	Introduction to coastal engineering, wave trasformation in coastal zone and breakwater design	1 2 3 4 5
12	Concepts in sediment transport, incipient sediment motion, conceptual design of unlined channels	1 2 3 4 5
13	Elements of computer calculation, models for non-uniform flows computation	1 2 3 4 5
14	Analyze non-uniform flow and compute flow profiles	1 2 3 4 5
Objective. To study and analyze free surface hydraulics and coastal enginering problems. **Outcome.** How well did this course increase your ability to understand and/or do the following?		
15	Perform hydraulic analysis and design of culverts and channel transitions inverted siphons.	1 2 3 4 5
16	Perform hydraulic analysis and design of breakwaters, coastal protection structures	1 2 3 4 5
Objective. To study and analyze problems associated with sediment transport in rivers and channels **Outcome.** How well did this course increase your ability to understand and/or do the following?		
17	Perform hydraulic analysis and design of unlined channels	1 2 3 4 5
18	Perform sediment transport analysis to estimate suspension and bed load in a natural channel.	1 2 3 4 5
19	Analyze reservoir sedimentation and sediment controls of reservoir	1 2 3 4 5
Relationship of Civil Engineering Program Course Objectives to Outcomes		
Objective. The Civil Engineering program is designed to teach beyond the technical content of the curriculum and prepare the students to utilize what they learn in a professional setting. Engineering projects and research activities enlist skills and demonstrate ability to understand the subject matter and communicate in a proficient manner. This course contributes to the overall program goals in the following ways. **Outcome.** How well did this course increase your ability to understand and/or do the following?		
(a)	an ability to apply knowledge of mathematics, science, and engineering	1 2 3 4 5
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data	1 2 3 4 5
(c)	an ability to design a system, component, or process to meet desired needs within realistic constraints	1 2 3 4 5
(e)	an ability to identify, formulate, and solve engineering problems	1 2 3 4 5
(h)	the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	1 2 3 4 5
(k)	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	1 2 3 4 5