**CIV E 429 SYLLABUS**

COURSE NAME: Environmental Engineering Design- CIV E 429  
DETAILS: 3 hour lectures, 3/1 hour Lab   
TERM: Winter

COURSE DESCRIPTION

\*4.5 (fi 8) (second term, 3-0-3) Fundamentals of municipal planning and design of water supply, water and

wastewater treatment, storm water management, or wastewater collection and management systems.

Course includes design projects, field trips, and presentations. Students work in teams on a design project.

REQUIRED MATERIAL

No required material found in syllabus

LECTURE CONTENT

The following course learning outcomes are organized by course activities. By the end of the course all

participants should be able to:

Structured Self-Learning Assignments:

1) Identifies and accesses appropriate sources of knowledge and/or training.

2) Evaluates information sources critically for accuracy and relevancy.

3) Elicit and articulate assignment requirements from teaching assistant.

Overall Design Project:

4) Devise and put into use, an environmental engineering system design process.

5) Understands and performs assigned role (peer evaluations).

6) Meets expected responsibilities and tasks (peer evaluations).

7) Actively contributes to team discussion and planning (peer evaluations).

8) Respects contributions of other team members (peer evaluations).

Action Plan (project management):

9) Prepares and follows a project management process.

Progress Meetings:

10) Recognizes iterative process refining solution until requirements met.

11) Understands and performs assigned role (instructor assessments).

12) Meets expected responsibilities and tasks (instructor assessments).

13) Actively contributes to team discussion and planning (instructor assessments).

Technical Memorandum (TM):

14) Apply mathematical methods for the generation, analysis, and planning of engineering design (all TMs).

15) Identifies and accesses appropriate sources of knowledge and/or training (all TMs).

16) Evaluates information sources critically for accuracy and relevancy (all TMs).

17) Elicit and articulate project requirements from instructor (TM1).

18) Determine appropriate regulatory, legal, social, ethical, and sensitivities (TM1).

19) Synthesize plausible solutions (TMs 2 & 3).

20) Assesses impact of solution against social and environmental factors as appropriate (TM3).

21) Analyzes environmental impact of proposed engineering project (TM3).

22) Assesses the social, health, or safety impact of a design on society (TM3).

23) Analyzes performance of proposed solution (TM3).

24) If possible, includes economic analysis within design project (TM3).

Draft Reports & Final Report:

25) Analyze performance of proposed solution.

26) Presents information in an organized fashion (all reports).

27) Uses proper grammar and punctuation (written reports).

28) Uses language effectively (all reports).

29) Prepares and delivers an effective oral presentation.

30) Makes effective use of graphical elements to support message (all reports).

31) Asses effectiveness of solution against customer’s requirements, as well as, on social and environmental

factors using a design compliance matrix.

LAB CONTENT

No lab content found in syllabus.