SS 2320 ENVIRONMENTAL FIELD METHODS

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Catalog Course Description

This course will cover topics related to environmentally relevant field work in the developing world. Specifically, field and lab practical experiences supplemented with necessary lecture will be the core of the course. Surface water and groundwater collection will be addressed as well as the analysis of coliform bacteria, basic water quality parameters, and inorganic contaminants. Topics will also include soil collection and analysis, sanitation and water systems in the field, mapping, basic GIS, and systems planning.

Prerequisites

Sophomore standing or above is required. Concurrent enrollment in SS 23XX Engineering and Design for the Developing World is required. Enrollment is by application and therefore requires instructor approval.

Textbook and Other Related Material

There is no assigned textbook for this course; however, multiple readings will be provided from various sources at the beginning of the term.

Course Objectives

Analyzing and addressing environmental problems often requires field study and implementation. This course will provide students with exposure and specific training in water and soil collection and analysis in a field setting. Results will be analyzed and integrated to develop complete assessments of given environmental systems. Throughout the course and effort will be made to utilize current techniques and tools. The course has an integrated lab component that requires hiking and physical activity on a near daily basis. The course will further have a theme of addressing such problems while in a developing world setting. Addressing such problems in impoverished areas with limited resources provides a unique set of challenges.

Course Requirements

Lab Reports	- 35%
In-Class Assignments	- 15%
Project Draft	- 15%
Final Project	- 35%

Relevant Environmental/Civil Engineering Program Outcomes

This course includes, but is not limited to, content supporting the educational objectives and outcomes of the environmental and civil engineering programs. Specifically, this course furthers the student's knowledge and skills involving:

- An ability to apply knowledge of mathematics, science, and engineering (Outcome A)
- An ability to identify, formulate, and solve engineering problems (Outcome E)
- An ability to communicate effectively (Outcome G)

Student Support

The Lyle School wishes to be a safe environment for learning and growing. In order to help students navigate their way through college the Lyle School has a policy in place to catch students who may be struggling. One of the key features of this policy is attendance. I will be taking attendance every day in class, if you miss a full week of courses and do not contact me, I will take that as an indicator you are having problems and notify the University that I have concerns. If you miss a week of classes due to illness, a trip or any other reason please let me know so we can avoid confusion. This policy is in place to protect you yet be unobtrusive. If you ever have issues and need help, the SMU Office of Student Life is also available.

Academic Honesty

Academic dishonesty may be defined broadly as a student' misrepresentation of his or her academic work or of the circumstances under which the work is done. This includes plagiarism in all papers, projects, take-home exams, or any other assignments in which the student represents work as being his or her own. It also includes cheating on examinations, unauthorized access to test materials, and aiding another student to cheat or participate in an act of academic dishonesty. Failure to prevent cheating by another may be considered as participation in the dishonest act. I am not forgiving of cheating. I take this matter very seriously, so don't push me on it.

The Honor Code of Southern Methodist University (from SMU student handbook): Intellectual integrity and academic honesty are fundamental to the processes of learning and evaluating academic performance; maintaining them is the responsibility of all members of an educational institution. The inculcation of personal standards of honesty and integrity is a goal of education in all the disciplines of the University. The faculty has the responsibility of encouraging and maintaining an

atmosphere of academic honesty by being certain that students are aware of the value of it, that they understand the regulations defining it, and that they know the penalties for departing from it. The faculty should, as far as is reasonably possible, assist students in avoiding the temptation to cheat. Faculty must be aware that permitting dishonesty is not open to personal choice. A professor or instructor who is unwilling to act upon offenses is an accessory with the student offender in deteriorating the integrity of the University. Students must share the responsibility for creating and maintaining an atmosphere of honesty and integrity. Students should be aware that personal experience in completing assigned work is essential to learning. Permitting others to prepare their work, using published or unpublished summaries as a substitute for studying required materials, or giving or receiving unauthorized assistance in the preparation of work to be submitted are directly contrary to the honest process of learning. Students who are aware that others in a course are cheating or otherwise acting dishonestly have the responsibility to inform the professor and/or bring an accusation to the Honor Council.

Students and faculty must mutually share the knowledge that any dishonest practices permitted will make it more difficult for the honest students to be evaluated and graded fairly, and will damage the integrity of the whole University. Students should recognize that their own interest, and their integrity as individuals, suffers if they condone dishonesty in others.

Topics Covered

Labs

- July 26 — Lab I: GPS, GIS, & Mapping
- July 31 — Lab II: Field Water Quality Testing
- Aug 2 — Lab III: Water Sampling and Lab Testing
- Aug 7 — Lab IV: Soil Sampling and Field Characterization
- Aug 9 — Lab V: Soil Lab Testing
- Aug 14 — Final Project Prep
- Aug 16 — Final Project

Lectures

- July 23 — Intro to the Program
- July 25 — GPS, Mapping, Computing
- July 30 — Water Quality Parameters & Sanitation
- Aug 1 — Water Chemistry & Sampling Techniques
- Aug 6 — Soil Science & Characterization
- Aug 8 — Soil Mineralogy and Chemistry
- Aug 13 — Combined Lecture on Systems
- Aug 15 — Final Project Prep