CE 4333 – Special Topics in Water Resources
Pollution Prevention in Cuba

Time and Location

Time is listed on attached schedule below. Location is Havana, Cuba. The syllabus is adjusted to reflect special circumstances related to the international experience. The tabular schedule is a guideline; we will try to follow it closely, but be prepared to adjust to changes in pace dictated by our collective experience.

Instructor

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Office Hours

Open door – we can meet after each day for questions.

Catalog Description and Prerequisites

CE 4333. Special Problems in Water Resources (3). Individual studies in water resources. May be repeated for credit.

Textbook

Readings on class server
`http:\\www.rtfmps.com\university-courses\ce4333-CostaRica`

Purpose

This course introduces engineering students to the business of pollution prevention in a changing economy. Two small businesses will be examined and current pollution prevention practices observed. Then students will research potential improved practices that could be implemented and prepare written pollution prevention plans for each business in English (and possibly Spanish time and skill permitting).

Objectives

Upon completion of this course, students should be able to:

1. Identify concepts of pollution prevention suitable for use in urban environments.
2. Develop a pollution prevention checklist for visiting a small business.
3. Develop a pollution prevention plan for a small business based on a site visit (above) and current general pollution prevention concepts – the plan is to be tailored to an individual business.
4. Synthesize the plan and related concepts into an integrated environmental-economic-engineering themed report (suitable for presentation to both the small business and the technical community)

Course Schedule

Table 1: CE 4333 Schedule (Tentative) – Intersession 2017-2018

ID: Activity code; ≈ 3.5 hours of contact time;
DATE : Date of scheduled activity;
TOPIC: Content synopsis;
READING: Relevant Readings.

ID	DATE	TOPIC	READING
1	02JAN18 (Tue)	Travel Day (Domestic USA to Miami)	
2	03JAN18 (Wed)	Travel Day (Miami to Havana – group travel as per US and CUBA requirements)	
3	04JAN18 (Thu)	Introduction/Orientation; Living/Shopping/Rules (classroom and/or walking)	
4	05JAN18 (Fri)	Visit Business #1 Apply Pollution Prevention Checklist – Business Owner to express needs	
6	06JAN18 (Sat)	nearby tour of museum/beach and/or cultural/political attraction	
7	07JAN18 (Sun)	Unstructured (1/2) day – Evening group reflection	
7	08JAN18 (Mon)	Prepare PPP template (classroom)	
8	09JAN18 (Tue)	Day tour of sugar/coffee/or tobacco plantation/farm (?)	
9	10JAN18 (Wed)	Prepare PPP for Business #1 (classroom)	
10	11JAN18 (Thur)	Ernesto Guevara Museum (cultural/political)	
11	12JAN18 (Fri)	Visit Business #2 Apply Pollution Prevention Checklist – Business Owner to express needs	
12	13JAN18 (Sat)	nearby tour of museum/beach cultural/political attraction	
13	14JAN18 (Sun)	Unstructured (1/2) day – Evening group reflection	
14	15JAN18 (Mon)	Prepare PPP for Business #2 (classroom)	
15	16JAN18 (Tue)	Prepare Final Report (classroom)	
16	17JAN18 (Wed)	Travel Day	

Assessment Instruments

Field Trip Reports

Students are to write a trip report; the report is to be in memorandum format no longer than two pages of text. Photographs are encouraged. The reports will be evaluated for content, insight, spelling, and grammar. A template will be provided before travel.

Pollution Prevention Plans

The purpose of the special topic is to visit two small businesses in Cuba and evaluate their pollution prevention activities and prepare a pollution prevention plan (PPP) for the business. The activity is good training, as well as a chance to examine business in another nation that has different rules and methods. The PPP will be developed in English, however Spanish fluent students will be tasked with translation into technical Spanish as part of their role in the class.

Class Report

A class report comprised of the two PPPs, the PPP checklist(s) used, and the results of the visit will be prepared on the last day before departure.
The final report is due, by email, on January 23.

Grading Policy

Final grades are determined based on performance during the course. Letter grades will be assigned using University standards. The **approximate** weighting of graded material in determining the final grade is as follows[1]:

Item	Percent of Grade
Participation	20%
PP Plan 1	20%
PP Plan 2	20%
Final Report	40%

[1]Graded materials with fewer than 100 points will have raw scores normalized to 100 points for calculating the final grade.

ABET Program Outcomes

A subset of the ABET Program Outcomes are addressed in CE 4333, these outcomes are listed below:[2]

- `3[a].` Ability to apply knowledge of mathematics, science, and engineering.
- `3[b].` Ability to design and conduct experiments, as well as to analyze and interpret data.
- `3[e].` Ability to identify, formulate, and solve engineering problems.
- `3[i].` Recognition of need for life-long learning.
- `3[k].` Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- `8[d].` Proficiency in water resources engineering.

Academic Misconduct

Refer to the Texas Tech University Catalog and operating policies (OP 34.12) regarding academic integrity, cheating, and plagiarism. Academic dishonesty will not be tolerated.

Disability Policy

"Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructors office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office at 335 West Hall or 806- 742-2405."

[2]Item 3[b] below is only partially fulfilled – in this course students will analyze and interpret data, design of experiments is beyond the scope of the class.