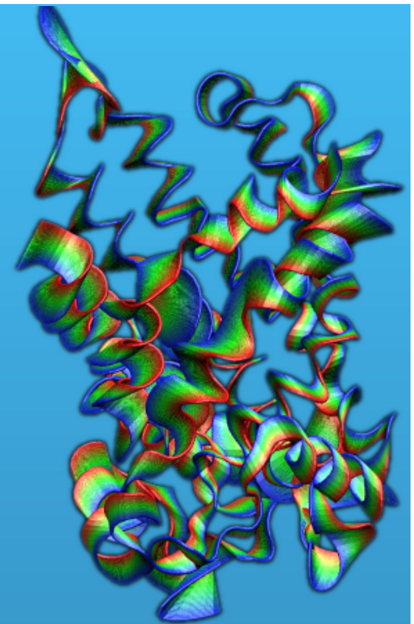

Evaluation and Presentation of Experimental Data – I

Dr. Pramod Abichandani

ENGR 201 - Syllabus Spring 2012

Today's technology climate has created a data driven economy. Several technical fields generate large amount of data. These large-scale datasets are analyzed to understand the societal, social, environmental, financial, economic, and technology impacts of the products, services, and policies that generate them. This mission of this course is to immerse students in the technical challenges associated with contemporary data analytics.

To achieve this mission, the course will introduce to the students, two modules covering the state-of-the-art in Environmental and Financial Engineering. Lectures will provide relevant technical and mathematical background that will enable students to analyze large-scale datasets associated with these fields. Students will be given bi-weekly assignments that will be discussed in the labs. There will be a final report for each module that will feature students collecting relevant data about the topics, performing descriptive and predictive analyses, and presenting their findings in a visually compelling manner. Students will select any one of the two modules and present their findings in the class.

Learning Objectives:
By the end of this class

1) Students will be able to extract and process data from sources like websites, spreadsheets, and sensors.
2) Students will be able to design and apply descriptive and predictive statistics to analyze this data.
3) Students will be able to use technical software required to perform these analyses.
4) Students will be able to prepare and present visualizations (reports, charts, GUIs, infographics) that provide meaningful insights gleaned from the analyses.

Table 1: Tentative Outline

Week	In- Class Topics	Assignments
1	Introduction	✔
2	Math + Software	
3	Environmental Engineering – I (Global Climate Change)	✔
4	Environmental Engineering - II (Indicators)	
5	Environmental Engineering - III (CO2 + CH4)	✔
6	Environmental Engineering – IV (EPA Philadelphia) **(Module Reports due)**	
7	Financial Engineering - I	✔
8	Financial Engineering - II	
9	Financial Engineering – III	✔
10	Financial Engineering – IV **(Module Reports due) (Presentations due for feedback)**	
11	In-class Presentation	

Policies:

1) Students will work in pairs for bi-weekly assignments that will be released via the course website on Mondays of Weeks 2, 4, 6, 8, and 10 of the term. The deadline for student submissions for the assignment is Friday 11:59 p.m. of Weeks 3, 5, 7, 9, and 11.
2) Student groups should be formed by the end of the first week of the term. Two students per group.
3) No late assignments and/or late reports will be accepted except for valid medical reasons or prior arrangement with Dr. Abichandani.
4) Plagiarism of assignments and/or reports will result in zero (0) points.

Table 2: Grade breakdown for ENGR 201, Spring 2012

Item	Breakdown
Module Reports	2x 25% = 50%
Presentation	25%
Class participation	15%
Grade Release Survey	10%
Total	100%

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