COSC 480 - Topics in Computer Science
MATH 482 - Topics in Mathematics

Operations Research
Fall 2012
Syllabus

Want to predict the future? Now you can. Not really.

Just the Facts

Course Number: COSC 480, MATH 482
Title: Topics in Computer Science/Mathematics - Operations Research
Semester: Fall 2012
Meeting Time: MW 2:40-4:30 pm
Locale: Schaefer 165
Instructor: Alan Jamieson
Office: Schaefer 154
Office Hours: MWF 1:30-2:30 pm
Email: acjamieson@smcm.edu
AIM: DrRipark
gtalk: alansmcm
Online Office Hours: Most evenings and weekends
Textbook: Bronson & Naadimuthu, *Schaum's Outlines: Operations Research*, 2nd Edition
Website: http://faculty.smcm.edu/acjamieson/f12/cosc480.html

Catalog Description: This course is a rigorous study of an important field in computer science. Examples: data security; bioinformatics; natural language processing; compilers. A detailed course description will be available before registration. The course may be repeated for credit where the topic is not repetitive. Prerequisite: COSC 201 or permission of the instructor.

Overview: If you take a look at major international corporations, each of them will have a small (or sometimes rather large) department focused on predicting the future. For a company like Unilever, this department will be focused on predicting market trends, planning best shipping practices, and managing their manufacturing resources. For a company like Six Flags Entertainment Corporation, this could involve making predictions on when to open, when to close, when to open new rides, and how to manage crowd flow. These departments have a variety of names, but all work in a single discipline: Operations Research. The set of skills needed for OR can make a prospective employee very desirable by an employer, and allow the job seeker tremendous flexibility in how and where they end up working. Unfortunately, undergraduate curriculums across the country frequently neglect this discipline. This is our attempt to rectify that neglect.

Purpose: How do you predict the future? More simply, how do you make a decision? How do you decide what you want to have for dinner? What about what you are going to wear tomorrow? All of these things, believe it or not, fall within the realm of Operations Research. We'll take a look at a variety of ways of approaching the variety of problems in OR, including decision making and predicting the future (sometimes the same thing, but sometimes not). The techniques you'll be exposed to during this semester are the same techniques used by major corporations across the world.

Grade Distribution:

Quizzes, Homework and Participation - 25%
Midterm - 10%
Small Projects (2) - 10% each
Half-term Project - 35%
Final Project Presentation - 10%

You will be expected to participate in class by asking questions and answering questions posed by myself and those in class. Rather than a drab lecture, the class sessions will be run in a discussion

style environment. Activity and debate are highly encouraged.

Final Information: What, the half-term project wasn't hard enough? We don't need no stinkin' final! However, all students are expected to attend a post-action meeting held during an alternative final period to be scheduled on Saturday, December 8th in Schaefer 165.

Assignments: There will be three project-level assignments and many homeworks in this course. Two of the projects will be small, focused problems and the third will be a longer, half-term major project. As soon as the projects descriptions are prepared, they will be posted, but data appropriate to the problems (when applicable) will be distributed closer to the proper assignment date. All projects will be done in teams of 3 or 4, with at least one mathematics student, and two computer science students per team. Team assignments will be discussed at a later date.

Blackboard Use: I will be utilizing Blackboard primarily for your grades in this course. Course materials will be provided on the course website.

Policies

Cell Phones: Please, turn off or turn to silent any cell phones prior to getting to class. If they go off in class they are distraction not only to myself, but to everyone else in the class as well. Habitual offenders will be excused from the class with a 0 for any quizzes and class participation for that day.

Computer Use: Computer use in this lab is for academic use only. If you bring a laptop with you to this class I expect you to be only using it for purposes related to this class. The same goes for the computers in this lab.

Attendance and Tardiness: Attendance is highly recommended. Missing a class not only causes you to miss the information disseminated in that lecture, but can cause you to miss important information in regards to assignments and the potential of receiving a 0 for a quiz that day. I start class promptly on the hour and expect the students to be in class at that time. If you have circumstances that can prevent you from being in class on time, please let me know as soon as possible. Habitual offenders will be excused from the class with a 0 for any quizzes and class participation for that day.

Exams and Quizzes: There will a single midterm in this class, scheduled at least a week ahead. Every class has the potential of having a quiz to reinforce the ideas from the lecture the previous class. These will not be announced ahead of time. They will be 1-3 question quizzes that can be easily done in 15 minutes either at the start or the end of the class period.

Assignments: Assignments and other outside of class work should be done on an individual basis unless otherwise specified in the description of the assignment. Assignments and other outside of class work will not be taken late except under extraordinary and documented circumstances.

Extra Credit: I will not be offering any extra credit opportunities in this class.

Communication: The simplest way to get in touch with me is by coming by my office during my office hours or contacting me via email. The easiest way to get in touch with me "after hours" is to send me an email. I habitually check my St. Mary's email account all hours of the day. If you come by my office and the door is open, feel free to stop in to chat. The open door indicates that I'm not working on anything that has to keep my undivided attention at that time so do not feel that you are interrupting me or anything like that. I do make appointments if you have a certain time that you'd like to meet with me. If it fits in my schedule (meaning I'm not teaching class during that time) I will be happy to meet with you.

Academic Honesty: Academic misconduct policies are covered in the Student Code and Student Rights and Responsibilities, Article III. Pay close attention to the definitions of academic misconduct noted in Section 1. This can be found in the Student Handbook.

Disability: If you have any kind of disability that can affect your performance in this class, please let me know privately through email or stopping by my office.

Schedule: The schedule for the class will be posted to the class website. The schedule is subject to change (multiple times).

Closing: The most important thing in any of my classes is that you are learning and expanding your horizons. If you are having any undue difficulty with your work as it pertains to this class, please contact me as soon as possible. Always remember that professors succeed when you don't need us any longer. I want you to be bouncing ideas off of each other throughout the class and it is my hope that by the end of the semester that you are driving the class session rather than me.