OR/MATH 442: Stochastic Operations Research

Fall 2011
Nguyen Engineering Bldg., room 1107
Tuesdays/Thursdays 12:00-1:15pm

Professor: Stephen G. Nash
Office: Nguyen Engineering Bldg., room 2202
Phone: 703-993-1678
E-mail: snash@gmu.edu [often the best way to contact me]
Office hours: Tuesday/Thursday 3pm-4pm, and by appointment; via e-mail at other times

All course materials will be posted at mymason.gmu.edu

Textbook: *Operations Research Applications and Algorithms*, Wayne L. Winston (4th edition)

Objectives: The intent of this course is to provide a modern perspective on the analysis of
                systems that are stochastic in nature, that is, ones that have a random component.
                There will be an emphasis on the underlying random processes, ultimately leading
                to the development of practical strategies for dealing with the design and analysis
                of these systems in a contemporary technological environment. The course will
                provide a survey of probabilistic methods for solving decision problems under
                uncertainty. Topics covered by this class include inventory theory, Markov
                chains, queuing theory, forecasting, and simulation. Some review of probability
                theory will also be included.

Tentative Course Schedule

Week	Topic	Chapters
8/30	Introduction; Deterministic Inventory Models	15.1-15.4
9/6	Deterministic Inventory Models	15.5-15.7
9/13	Probabilistic Inventory Models	16.1-16.4 [no class on 9/13]
9/20	Probabilistic Inventory Models	16.5-16.6
9/27	Markov Chains	17.1-17.3
10/4	Markov Chains	17.4-17.6
10/11	Queuing Theory	20.1-20.2 [no class on 10/11, Columbus Day]
10/18	Midterm; Queuing Theory	20.3-20.4 [midterm on 10/18]
10/25	Queuing Theory	20.5-20.6
11/1	Queuing Theory	20.7-20.8
11/8	Queuing Theory	20.9-20.11
11/15	Forecasting Models	24.1-24.6
11/22	Simulation	21.1-21.2 [no class on 11/24, Thanksgiving]
11/29	Simulation	21.3-21.6
12/6	Dynamic Programming; Review	18.1-18.4
12/15	*Final Exam (10:30am-1:15pm)*	

Grading: 30%   Homework
                30%   Midterm exam
                40%   Final exam

Policies

Coursework & Grading

Unless otherwise indicated, you are expected to work individually on homework assignments. Late submissions are not accepted. You can submit homework directly to me (in class or at my office), through the SEOR department office, via email, via fax (703-993-1521), and at mymason.gmu.edu.

Academic Integrity

GMU is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.

GMU Email Accounts

Students must use their Mason email accounts to receive important University information, including messages related to this class. See http://masonlive.gmu.edu for more information.

Office of Disability Services

If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS. http://ods.gmu.edu

University Policies

The University Catalog, http://catalog.gmu.edu, is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Other policies are available at http://universitypolicy.gmu.edu/. All members of the university community are responsible for knowing and following established policies.