

OR 542

Operations Research: Stochastic Models

Spring 2020

Important Announcements

- Homework assignments, solutions, ppt files of lectures, lecture recording, and sample exam questions can be downloaded at Blackboard (via [myMason](#)).
- Exam 1: Take-home on March 18. Make up exam questions will be **MUCH HARDER** than regular exam questions.
- Exam 2: Take-home on April 15. Make up exam questions will be **MUCH HARDER** than regular exam questions.
- No class meeting on February 19. Students will be required to watch some lecture recordings.
- **Reminder:** some announcements will be sent to your GMU email address. Please check your GMU emails routinely or ensure that they are forwarded correctly.
- **Useful SEOR Seminar** (Bonus point will be given if you attend the seminar and submit a one-page report. The report must include what you learn from the seminar and what you think it useful for your study):

Title: Stochastic Simulation and Decision

Speaker: Prof. Sheldon Jacobson, from University of Illinois at Urbana-Champaign

Time: 11:00 AM - 12:00 PM, Friday, Feb. 28, 2020

Location: TBA

Instructor: Chun-Hung Chen

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Office Hours: Wednesday 2:30 - 4:30PM

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Office Hours: TBA

Library Resource Assistant: Theresa Calcagno; tcalcagn@gmu.edu; 703-993-3712

Course Description:

A survey of probabilistic methods for solving decision problems under uncertainty, probability theory review, reliability, queuing theory, inventory systems, Markov chain models, and simulation. Emphasis on modeling and problem solving.

Prerequisites: STAT 344, or MATH 351, or equivalent.

Grading: Homework 10%; Term Project 10%, Two exams 80% (higher one 45%, lower one 35%).

Required Text: W. L. Winston, "Operations Research: Applications and Algorithms" 4rd edition, 2004. Two copies of the text books have been placed on reserve at the Johnson Center Library. It may be borrowed for 2 hours at a time. To borrow the book, you will need the call number: T57.6.W645 2004.

Examinations:

There will be two take-home exams. The exam runs from 4:30pm of the day to 11:50pm of the next day. Make up exam questions will be **MUCH HARDER** than regular exam questions.

Blackboard (via [myMason](#)):

1. You can download the ppt files of lectures at "Course Content" section.
2. Homework assignments and term project are available at "Assignment" section.
3. Solutions to homework will be posted at "Assignment" section after submission deadline.
4. Sample exam questions and their solutions can be downloaded at "Assignment" section.

General Rules:

1. No matter which section you enroll, you are very welcome to attend the classroom section (James Buchanan Hall D003) and meet with the instructor face-to-face.
2. Homework must be submitted *as a single pdf file* through Blackboard via [myMason](#)
3. Late homework is always allowed. No need to get advanced permission. However, the penalty for late homework is **25%** for the first day and then **5%** per day. **No exemption.**
4. No collaborations are allowed for homework, although discussions are encouraged.
5. Comments are strongly encouraged.
6. No cheating.

Course Outline& Reading Assignment:

	Topics	Time (week)	Reading Assignment
A	Introduction & Probability review	2.5	Chapter 12
B	Decision making under uncertainty	1	Chapter 13
C	Inventory Models	3	Chapters 15 & 16
D	Markov chains	2	Chapter 17
E	Queueing theory	2	Chapter 20
F	Simulation	1.5	Chapters 21, 22, & 23

To Join the Internet Sections or Watch Lecture Recordings

- Access Blackboard via [myMason](#)
- Then you can join the internet section or watch recordings via "Blackboard Collaborate Ultra". Please [click here for an introduction](#).

Go to [Professor Chun-Hung Chen's Page](#)

Important Statements from University

Academic Integrity

GMU is an Honor Code university; please see the Office for Academic Integrity 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.

Disabilities Statement

If you have a documented learning disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Office of Disability Services (SUB I, Rm. 4205; 993-2474; <http://ods.gmu.edu>) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

Mason Diversity Statement

George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty and staff. Through its curriculum, programs, policies, procedures, services and resources, Mason strives to maintain a quality environment for work, study and personal growth.

An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals. Diversity is broadly defined to include such characteristics as, but not limited to, race, ethnicity, gender, religion, age, disability, and sexual orientation. Diversity also entails different viewpoints, philosophies, and perspectives. Attention to these aspects of diversity will help promote a culture of inclusion and belonging, and an environment where diverse opinions, backgrounds and practices have the opportunity to be voiced, heard and respected.

The reflection of Mason's commitment to diversity and inclusion goes beyond policies and procedures to focus on behavior at the individual, group and organizational level. The implementation of this commitment to diversity and inclusion is found in all settings, including individual work units and groups, student organizations and groups, and classroom settings; it is also found with the delivery of services and activities, including, but not limited to, curriculum, teaching, events, advising, research, service, and community outreach.

Acknowledging that the attainment of diversity and inclusion are dynamic and continuous processes, and that the larger societal setting has an evolving socio-cultural understanding of diversity and inclusion, Mason seeks to continuously improve its environment. To this end, the University promotes continuous monitoring and self-assessment regarding diversity. The aim is to incorporate diversity and inclusion within the philosophies and actions of the individual, group and organization, and to make improvements as needed.

Student Support Resources on Campus

Resources that you may find helpful may be found at:
<http://ctfe.gmu.edu/teaching/student-support-resources-on-campus/>