OR 541: Deterministic Models

Fall 2012
Robinson Hall B203
Monday 4:30-7:10pm

Instructor: Chien-Chung(Edward) Huang
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Office hours: Monday 2pm - 4pm, and by appointment; via e-mail at other times
Prerequisites: Linear Algebra.

Textbook: *Operations Research Applications and Algorithms*, Wayne L. Winston (4th edition)
Software: *MPL*, available from www.maximal-usa.com
Course objectives: The course focuses on modeling, developing, and solving a variety of deterministic optimization problems. Students will gain experience in converting a variety of applied problems to optimization models, representing these models in a sophisticated modeling language, solving these models with a variety of algorithms and software, and interpreting the results using sensitivity analysis and other approaches. All course materials will be posted at Blackboard.

Tentative Course Schedule

Date	Topic	Chapters
Aug 27	Introduction; Linear Programming	1, 3.1-3.2
Sep 3	Labor Day; No Class	
Sep 10	Linear Programming	3.3-3.9
Sep 17	The Simplex Method	4.1-4.2, 4.5
Sep 24	The Simplex Method	4.6-4.8, 4.12
Oct 1	Sensitivity Analysis & Duality	6.1-6.3
Oct 9 (Tue)	Sensitivity Analysis & Duality	6.5-6.9
Oct 15	*Midterm*; MPL Formulations	
Oct 22	Transportation Problem	7.1
Oct 29	Transportation Problem; Networks	7.2, 8.1-8.2
Nov 5	Networks; Integer Programming	8.3, 8.6, 9.1-9.2
Nov 12	Integer Programming	9.3, 9.5
Nov 19	Integer Programming	9.7, 11.1-11.3
Nov 26	Nonlinear Programming	11.1-11.4, 11.6
Dec 3	Nonlinear Programming	11.8-10
Dec 10	Reading Day; No Class	
Dec 17	*Final Exam (4:30-7:15pm)*	

Grading:
20% Homework
25% Midterm exam
20% Computational project
35% Final exam

Coursework & Grading Policies
Unless otherwise indicated, you are expected to work individually on homework assignments, projects, and exams. Late submissions are not accepted. You must submit homework directly to me via email at chuang10@gmu.edu.

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.

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.

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

Technology Policies
Cell phones, pagers, and other communicative devices are not allowed in this class. Please keep them stowed away and out of sight. Laptops or tablets (e.g., iPads) may be permitted for the purpose of taking notes only, but you must submit a request in writing to do so. Engaging in activities not related to the course (e.g., gaming, email, chat, etc.) will result in a significant deduction in your participation grade.

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.