

Operations Research

56:171 Operations Research
Fall 2002

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Questions regarding grading of a homework assignment or quiz should be directed to the appropriate TA.

Students with questions, complaints, &/or suggestions are encouraged to contact the [instructor](#) or [TA](#) via e-mail when possible.

Topics include

- Linear programming models
- Simplex & revised simplex algorithms
- Duality & sensitivity analysis in LP
- Transportation & assignment problems
- Project scheduling
- Decision trees
- Integer programming models
- Stochastic processes: Markov chains & birth/death processes
- Queueing models
- Dynamic programming: deterministic & stochastic

Textbook:

Introduction to Operations Research, 7th edition, by Frederick Hillier & Gerald Lieberman (ISBN 0-07-246121-7)

A very complete coverage of linear and integer programming, network models, dynamic programming, etc., in addition to applied stochastic processes. Includes student editions of several software packages: LINDO and LINGO, CPLEX, MPL, MS Project, & various Excel add-ins.

See <http://www.mhhe.com/hillier>.

(Will be available at IMU Bookstore. Earlier editions, if you have one, are also acceptable.)

Reserve books in Engineering Library:

Schrage, Linus (1999) *Optimization Modeling with LINGO* (3rd edition), LINDO Systems, Inc. (ISBN: 1-893355-00-4)

Winston, Wayne (1994). *Operations Research: Applications and Algorithms*. 3rd edition, Boston, PWS-Kent Publishing Company.

(This book had been used in this course during the previous ten years.)

Resources on the **WWW** will be also used.

There is a **course website** at

`http://asrl.ecn.uiowa.edu/dbricker/or_index.html`

from which you may download

- course syllabus
- current semester homework assignments & solutions
- past semester homework assignments & solutions
- sample quizzes & examinations, with solutions
- lecture notes (in form of pdf files, 1, 4, or 8 screens/page)
- some software (written in APL by the instructor) for Markov chain analysis, dynamic programming, transportation problem, & assignment problem

Homework:

- due Friday by 1:30pm, unless specified otherwise.
- Students will form teams to collaborate on HW, handing in one set of solutions per team.

Quizzes:

- Generally, a short (10-minute) multiple-choice quiz will be given the day that each HW is due.
- This quiz is intended to cover the same material as the HW for that day.
- Needless to say, collaboration is *not* allowed on the quizzes!

In the case of both homework and quizzes, each student's **three lowest scores will be discarded** when computing the course grade. *This, of course, means that you are allowed to "skip" three homeworks and three quizzes.*

Grading Scheme:

Midterm Examination	20%
Final Examination	20%
Quizzes (best 10 of 13)	30%
Homework (best 10 of 13)	20%
Lab/discussion exercises	10%