C&O 370

Deterministic OR Models

Fall 1995

Instructors:	(01) Dr. Charles E. Haff MC 5025, ext. 5594 chaff@math	(02) Dr. Henry Wolkowicz MC 6065, ext. 5589 henry@orion
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Lectures: (01) 10:30 MWF, MC 4041
(02) 1-2:30 TR, MC 4042

Texts: Applied Mathematical Programming, Bradley, Hax and Magnanti.
GAMS, A User's Guide, Brooke, Kendrick and Merraus.

Reference: Linear Programming, Chvatal.

Assignments: Homework problems will be assigned regularly, and may be done in groups of two or three. Format will be discussed in class.

Projects: In groups of three, you will write a term research project. Student accounts will be made available as project aids.

Examinations: There will be a midterm examination on Monday, November 6, 1995, 7-9 p.m.
There will be a final examination, scheduled by the registrar, on the text and lecture material.

Marking Scheme:

Homework	20%
Research Project	30%
Midterm Examination	20%
Final Examination	30%

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Course Topics Outline

Topics	Text References
<u>(a) Mathematical Programming</u>	Chapter 1
- An Overview	
<u>(b) Linear Programming</u>	
- Models & Modelling	Chapter 1 & 2
- The (Revised) Simplex Method and Bounded Variable Simplex Method	Chapter 2 & Appendices A & B
- Duality	Chapter 4 (4.1-4.6 and 4.8)
- Sensitivity Analysis	Chapter 3
- Computer Modelling (optional)	Chapter 5
<u>(c) Network Programming</u>	
- Models of Production & Transportation	Topics from
- Network Flow Problems	Chapter 8
<u>(d) Integer Programming</u>	
- Models of Scheduling & Allocation	Topics from
- Branch-and-Bound	Chapter 9
- Implicit Enumeration	
<u>(e) Dynamic Programming</u>	
- Models of Replacement & Allocation	Topics from
- Path Problems & Recursive Computation	Chapter 11
<u>(f) Large Scale Systems</u>	
- Delayed Column Generation	Topics from
- Decomposition	Chapter 12 (pp. 505-560) & Chvatal's, <u>Linear Programming</u> (Chapters 13 and 26)