

Volume 9

Quantitative Methods, Research Design and Computer Applications in Business

**Business Administration
Reading Lists and Course Outlines**

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Compiled by Richard Schwindt, *Simon Fraser University*,
August 1990

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Richard Schwindt, *Simon Fraser University*

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VOLUME 9

QUANTITATIVE METHODS, RESEARCH DESIGN AND COMPUTER APPLICATIONS IN BUSINESS

Charles Blair et al., <i>University of Illinois at Urbana-Champaign</i> Introduction to Operations Research.....	7
David Blair, <i>University of Michigan</i> Data Management Systems.....	10
Norman L. Chervany, <i>University of Minnesota</i> Decision Sciences and Information Systems.....	12
Thomas Cooley, <i>University of Rochester</i> Data Analysis and Forecasting.....	21
Joseph G. Davis, <i>Indiana University</i> Research Design and Methods in Management Information Systems.....	28
Sid Deshmukh, <i>Northwestern University</i> Operations Management.....	49
Al Dexter, <i>University of British Columbia</i> User-Oriented Information Technology.....	51
Jehoshua Eliashberg, <i>University of Pennsylvania</i> Research Methodology--Doctoral Seminar.....	60
Gordon C. Everest, <i>University of Minnesota</i> Database Structures, Design, Manipulation and Management.....	66
Gordon C. Everest, <i>University of Minnesota</i> Advanced Database Design and Administration.....	76
Gerald Ferris, <i>Texas A&M University</i> Seminar in Research Methodology.....	88
Robert M. Freund, <i>Massachusetts Institute of Technology</i> Decision Support Systems.....	118
William Glick, <i>University of Texas at Austin</i> Research Methods in Management.....	120
Terry Harrison, <i>Pennsylvania State University</i> Linear Programming.....	137
Terry Harrison, <i>Pennsylvania State University</i> Nonlinear Programming.....	139

Terry Harrison, <i>Pennsylvania State University</i> Mathematical Programming.....	141
Terry Harrison, <i>Pennsylvania State University</i> Multiojective Optimization.....	143
Terry Harrison, <i>Pennsylvania State University</i> Network Optimization.....	145
Michael Hottenstein, <i>Pennsylvania State University</i> Design of Operation Output Systems.....	147
Ted D. Klasterin, <i>University of Washington</i> Introduction to Operations Management.....	152
Ted D. Klasterin, <i>University of Washington</i> Facility Layout and Location.....	158
M.R. Leenders, <i>University of Western Ontario</i> Operations Management.....	165
M.R. Leenders, <i>University of Western Ontario</i> Purchasing and Materials Management.....	172
Ting-peng Liang, <i>University of Illinois at Urbana-Champaign</i> Introduction to Management Information Systems.....	178
Ting-peng Liang, <i>University of Illinois at Urbana-Champaign</i> Decision Support Systems.....	182
Henry Lucas, <i>New York University</i> Information Systems for Management.....	189
Henry Lucas, <i>New York University</i> Managing the Information Resource.....	196
Henry Lucas, <i>New York University</i> Research Practice in Information Systems.....	202
Alan W. Neebe, <i>University of North Carolina</i> Quantitative Methods.....	207
Alan W. Neebe, Noel Greis, and David Rubin, <i>University of North Carolina</i> Quantitative Methods.....	210
L. Orman, <i>Cornell University</i> Information Systems.....	212
E.R. Petersen, <i>Queen's University</i> Operations Research Bibliography.....	213

Trond K. Petersen, <i>University of California, Berkeley</i> Integral Concepts in Research and Theory in Business Administration	220
Donald Richter, <i>New York University</i> Quantitative Methods for Business Decisions	233
Larry Robinson, <i>Cornell University</i> Production and Operations Management	235
Larry Robinson, <i>Cornell University</i> Production Management	239
Paul Rubin, <i>Michigan State University</i> Decision Making Models	243
Paul Rubin, <i>Michigan State University</i> Linear Optimization Models	246
Paul Rubin, <i>Michigan State University</i> Advanced Optimization Models	247
Paul Rubin, <i>Michigan State University</i> Applied Stochastic Processes	249
Paul Rubin, <i>Michigan State University</i> Systems Simulation	250
John Sviokla, <i>Harvard University</i> Building the Knowledge Based Organization	253
Clinton White, <i>University of Delaware</i> Systems Analysis and Design Bibliography	279
Carson Woo, <i>University of British Columbia</i> Introduction to Management Information Systems	281
W.T. Ziemba, <i>University of British Columbia</i> Nonlinear Programming	284

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UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
College of Commerce and Business Administration

Introduction to Operations Research

Co-ordinator: Charles Blair

Instructors: Geoffrey Dickstein, Don Henson, Brian Upper, Bruce Walkup

This course will deal primarily with theory and applications of linear programming. Each section is taught separately, but all will be using the same schedule. Attendance is expected at all classes. If you miss a lecture, you should sit in on another class to see the material

TEXT: The text for this course is the set of notes available at the Dup-It. *The Compleat Strategyst*, by J. Williams is recommended reading in connection with the last chapter. Chapter 3 of the notes is based on *Linear Programming*, by V. Chvatal. Both books are on reserve at the Undergrad library.

HOMEWORK: There will be six assignments with the grade scale:

- 4 - understands the material, only a few minor mistakes.
- 3 - one major mistake or many minor mistakes
- 2 - you should see your instructor (or, if necessary, one of the other instructors) during office hours.
- 0 - not turned in.

Even if you can only do one or two of the problems, it is better to turn in a partial assignment than nothing. Rarely, we may give a grade of 1 if we feel the person isn't even trying. We will usually give out answer sheets the day the assignment is collected, so late assignments cannot be accepted. If there is a good excuse for missing an assignment, the average of the scores on other assignments may be used.

It is all right to work with another student on the homework, but you should both do some of the work. A main purpose of the homework is to help you prepare for the tests.

TESTS: There will be two, two-hour tests. Tests will be open book, open notes, partly multiple choice.

GRADES: Each test will be 100 points, and the final examination will be 120 points. The homework total will be multiplied by two and added to the test total to get a total score. This means that each test is about 27% of the grade, the final is 33% and the homework is 13%. A, B, and C grades will each be given to 25-30% of the class. In borderline cases, attendance and class participation may be considered.

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College of Commerce and Business Administration

Introduction to Operations Research

Co-ordinator: Charles Blair

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Schedule of Classes - Fall 1989

Class	Subjects	Reading
1	Operations Research in general. Mathematical form of LPs	1.1 (skim) 1.2, 1.3
2	Product mix (activity and resource) problems. Some common mistakes	2.1, 2.2
3	Overtime and recycling examples. Units. NO CLASS SEPTEMBER 5 (TUESDAY)	2.4, 2.5
4	More formulation examples. Overview of simplex algorithm	2.5, 2.6, 3.1
5	Basic and non-basic variables Entering and leaving variables	3.2, 3.3, 3.4
6	Calculating the dictionaries	3.5
7	Mistakes, unbounded problems	3.6, 4.2, 4.3
8	review FIRST TEST September 25 (MONDAY EVENING) NO CLASSES ON SEPTEMBER 26 or 27	exercises
9	Solving LPs on the computer	Chapter 6
10	Dual Prices, Reduced cost, Upper Limits	7.1, 7.2, 7.3
11	Lower limits. Sensitivity Examples	7.4 7.5 (part)
12	Using the Final Dictionary	7.5 (rest) 7.7
13	Minimax problems and T-3	8.1
14	Other minimax examples	8.2, 8.3
15	Expected values & 2-stage LP	9.1
16	Further 2-stage LP	9.2, 9.3
17	Review	exercises
8	SECOND TEST OCTOBER 30 (MONDAY EVENING) NO CLASSES OCTOBER 31 OR NOVEMBER 1	

Class Schedule (cont.)

18	Decision Trees	10.1
19	Bayes' Formula	10.2
20	Decision Trees with Bayes' Formula	10.3
21	Introduction to Game Theory Mixed Strategy and LP	11.1, 11.2
22	Optimal Strategies on Computer Special Games	11.3, 11.4
23	Games with random outcomes	11.5
24	Multi-stage games	11.6
25	Simple Poker Example	11.7.1
26	Complex Poker Examples	11.7.2
27	review	remaining probs. and old tests.
	FINAL EXAM	

UNIVERSITY OF MICHIGAN
Data Management Systems

Prof. David Blair

Fall 1989

Required: Coursepack

Data Base Management (2nd edition) McFadden and Hoffer

<u>Weeks</u>	<u>Topic</u>	<u>Readings</u>
INTRODUCTION		
1. September 12	Introduction to Data Mgmt.	Chapters 1, 2, & 3; Nolan "Future is now..."
2. September 19	Introduction (cont'd)	Drucker Chapter 6
TECHNICAL ASPECTS OF DBMS		
3. September 26	Data Dictionaries; Network (CODASYL)	Chapter 10 (pages 353-56) Chapter 11 (pages 382-90) Chapters 7,8, & 13
4. October 3	Relational Systems	Chapter 14
5. October 10	DB2	Codd
6. October 17	SQL/Query By Example	
MANAGEMENT OF DBMS		
7. October 24	Organizational response to the DBMS	Chapter 10 Both Nolan articles
8. October 31	Organizational response (cont'd)	Benbasat, et. al.
9. November 7	MIDTERM	
MANAGEMENT OF ILL-STRUCTURED DATA		
November 9	Information Retrieval	Blair "The Management of. Blair "The Data-Documt.. (pages 369-72) Gordon
10. November 14	The problem of measuring system effectiveness	Blair and Maron
11. November 21	Design Priorities in IR	Blair "An Extended..."
12. November 28	Current Information retrieval systems	Blair "An Extended..."; Stanfill; Flores; Malone
13. December 5	Advanced DBMS topics: Data Base Machines Distributed Data Bases Natural Language Front Ends 4th Generation Languages etc.	Chapter 16

UNIVERSITY OF MICHIGAN
Data Management Systems

Prof. David Blair

Fall 1989

Course Pack Citations:

- Benbasat, Izak, et.al. "A Critique of the Stage Hypothesis: Theory and Empirical Evidence", *Communications of the ACM*, Vol. 27, May, 1984, No 5, pp. 476-485.
- Blair, D.C. and M. Gordon, "The Management and Control of Written Information: Growing Concern Amid the Failure of Traditional Methods", Working Paper, Computer and Information Systems, University of Michigan, 1989.
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- Malone, T.W., et.al., "Intelligent Information Sharing Systems", *Communications of the ACM*, Vol. 30, No. 5, May 1987, pp. 390-402.
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