

MBA 710 Business Analytics

Spring 2017

Instructor: Dr. Hari K Rajagopalan

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Office Hours:

Weekly progress reports by email and online meeting using Blackboard Collaborate every Tuesday at 6 pm.

I Catalog Description

An analytical approach to the management process. Generalized models for decision making with major emphasis on application of the scientific method to management problems.

II Required background

Basic Excel skills. If you are not comfortable in Excel I recommend you buy

New Perspectives on Microsoft Excel 2013, Comprehensive 1st Edition by June Jamrich Parsons (Author), Dan Oja (Author), Roy Ageloff (Author), Patrick Carey (Author), Carol DesJardins (Author)

ISBN-13: 978-1285169330

ISBN-10: 1285169336

III Objectives

1. To provide students, primarily in the fields of business and economics, with a sound conceptual understanding of the role management science plays in the decision making process. Emphasis is placed on quantitative approaches to decision making as well as how they can be applied and interpreted.
2. Specific topics covered in this course include fundamental techniques such as linear programming, integer programming, statistics, and simulation.
3. All students must be able to effectively:
 - a. utilize forecasting (predictive) systems utilizing statistical techniques,
 - b. perform decision analysis using quantitative methods, including simulation, and linear programming, to solve operational problems, and

- c. apply heuristic and optimization methods to all areas in business including operations, production, finance, marketing and human resources.

IV Text and References

Spreadsheet Modeling and Decision Analysis: A Practical Introduction to Business Analytics, Cliff T. Ragsdale, Cengage Learning, 7th Ed., 2015, ISBN 978-1-285-41868-1

You can buy it from <http://www.cengagebrain.com/shop/index.html>

V Evaluations

All exams are open books open notes. You will have two take home exams which are open book and open notes. You should not take the help of your fellow students or anyone else except me. You are however welcome to use any books, notes or material you have. Your take home exams are each 30% of the grade and will be done in Microsoft Excel. **Once your exams are submitted, I may ask each one of you to make an appointment with me online for a one on one oral discussion on how you did your exam.** This process is to validate that you have done your exam and you understand what you submitted. You will have to explain the model, the concepts and how you implemented it. Failure to adequately explain the exam you submitted will result in you getting grade reduction. **(Your grade reduction can be 1 point or result in you getting a zero if you cannot explain what you did)**

You will also have a final exam which will be held on the Saturday April 22nd. This will also be 40% of your grade. Final exam is cumulative, will cover the material covered in exams 1 and 2. This will be held in class, but will be an open book exam. **You may not use recorded class lectures for this exam or any videos** but can use your book and any notes you may have.

Two take home exams	30% each	60%
One cumulative final exam in class	40%	40%
Total		100%

Everything you do will be evaluated on a 4 point scale.

In your exams there are two aspects of your work which will be evaluated. First the mathematical model and second the excel model and the explanation. To get a perfect score both have to correct.

Grade	Model	Excel
4.0 or "A"	No errors	No errors
3.0 or "B"	Minor errors No errors	No errors (Modeling error carried through) Minor errors
2.0 or "C"	Minor errors No error	Minor errors (other than modeling errors) Major errors
1 or "D"	Major errors	No errors
0 or "F"	Did not attempt	Did not attempt

Your final grades will be assigned as follows

Score	Grade
3.50 and above	A
3.00 – 3.50	B+
2.50 – 3.00	B
2.00 – 2.50	C+
1.50 – 2.00	C
Less than 1.5	F

VI Attendance

This is a completely online course. All lectures will be accessed through Blackboard (<https://blackboard.fmarion.edu/>). The student's responsibility is to listen to all lectures, read the chapters in the book, do the homework and ensure all the material is covered each week. I will be having office hours on Tuesday online on Blackboard Collaborate at 6 pm to clarify any doubts or questions. **Attendance for the final exam is compulsory.**

VII Philosophy of teaching:

I demand meaningful learning, which can be interpreted as being able to translate the ideas, free of errors, into your own words and solve problems that are **structurally different** from those presented in class and textbook(s). Hence, always try to learn the material by concentrating on the underlying principles. I will try to make you think by asking you questions and problems which may not be directly covered during the class lectures. I expect you to read the chapters which are going to be covered in class before coming in to the class. I will be giving regular homework problems and post solutions to them every week. It will be up to you to work on and finish these homework problems, I will not collect or grade them.

VIII Miscellaneous:

- The instructor reserves the right to change the course outline and the course contents.
- There will be no extra credit offered for any student during the semester.
- The instructor will keep all exams.
- All electronic & telecom equipment such as cell phones, beepers, etc. must be kept **silent** during the lecture.

IX Academic Honesty

I will enforce the rules of Academic Honesty very strictly. Any student caught cheating, or plagiarizing material will receive an automatic NC (F) for the entire course and will be reported to the Provost's office. Please read your students handbook on Academic Honesty.

X Topics Covered

1. Introduction to the course
2. Linear Programming
3. Network Modeling
4. Integer Linear Programming
5. Regression Analysis
6. Time Series Forecasting
7. Simulation

XI Course Schedule

(Subject to modification)

Week	Date	Description	Chapter
1	Jan 10 th – Jan 17 th	Linear Programming	Chapter 3 / Lecture 1
2	Jan 17 th – Jan 24 th	Linear Programming	Chapter 3 / Lecture 1
3	Jan 24 th – Jan 31 st	Network Modeling	Chapter 5 / Lecture 2
4	Jan 31 st – Feb 7 th	Integer Linear Programming	Chapter 6 / Lecture 3
5	Feb 7 th – Feb 14 th	Integer Linear Programming	Chapter 6 / Lecture 4
6	Feb 14 th – Feb 21 st	Integer Linear Programming	Chapter 6 / Lecture 4
	Feb 28th	Exam 1 Due	
7	Feb 28 th – Mar 7 th	Statistics	Handout/Lecture 5
8	Mar 7 th – Mar 21 st	Regression	Chapter 9 / Lecture 6
10	Mar 21 st – Mar 28 th	Forecasting	Chapter 12 / Lecture 8
11	Mar 28 th – Apr 4 th	Simulation	Chapter 13 / Lecture 9
12	Apr 4 th – Apr 11 th	Simulation	Chapter 13 / Lecture 9
	Apr 18th	Exam 2 Due	
	Apr 22rd	Final Exam	