

Management 4040 - 01 (CRN – 46988)

Quantitative Business Analysis

Syllabus

Course Description: This practical, application-oriented course builds on the foundation of elementary statistics and decision modeling techniques of prior courses. Students are provided real-world decision-making tools commonly used within the finance, operations, marketing, and accounting functions of the modern enterprise. Topics include financial break-even analysis, portfolio optimization models, correlation analysis, single- and multiple-regression, constrained optimization, and queuing theory. Microsoft Excel is used to create graphical and numerical outputs with emphasis on interpretation of output. A comprehensive case write-up and presentation, integrating the essentials of course tools is prescribed as the end-of-term project. Business cases are used throughout the term for learning and reinforcement purposes.

Prerequisites: MGMT 3600 & Advanced standing

Course Text: The text for this course is Practical Management Science, 4th Edition, Winston/Albright - ©2012. It can be purchased in hardcover or as an ebook. The ebook option provides an approximate \$200 savings over the hardcover option.

Course topics, examples, assignments and cases will be taken from the course text.

Learning Outcomes: This course is intended to address the following Udvar Hazy School of Business - Bachelor of Business program learning outcomes on the introductory and developmental levels:

1. A working level knowledge of the core functional areas of business:
 - A. Students will demonstrate a working level knowledge of core business functions in accounting, economics, finance, information systems, international business, legal and social environment, marketing, and management.
 - B. Students will analyze a complex business situation, identify relevant functional business issues and suggest viable courses of action.
2. The ability to apply higher levels of critical thinking:
 - A. Students will process a complex business situation, utilize qualitative and quantitative analysis and synthesize to develop sound alternatives for action.
3. The interpersonal and communication skills necessary to succeed in business:
 - A. Students will deliver professional quality oral presentations
 - B. Student will prepare professional quality written presentations
 - C. Students will identify the essential elements of successful teamwork and will reflect upon their competency and experiences in applying them

Course Objectives: This course will introduce students to a wide variety of analytical tools available to practitioners within the modern enterprise. The objectives of this course include:

- Develop both quantitative and qualitative skills to recognize, formulate and analyze business problems/issues related to finance, operations, marketing and accounting (LO 2A)
- Utilize a wide range of analytical perspectives to understand the interdependence of key functional areas in business organizations (LO 1A)
- Provide an enhanced analytical knowledge base for communicating with cross-functional personnel within the enterprise (LO 3C)

By the end of the course, students should be able to apply specific analytical techniques including; financial break-even analysis, portfolio optimization models, correlation analysis, single- and multiple-regression, constrained optimization, and queuing theory to problems and issues facing the modern enterprise. (LO 1B)

Attendance: Students are expected to attend every class session and are responsible for material covered and announcements, whether they are in class or not.

Grading and Course Content: Grades will be based on the following:

Mini-case Projects	50%
Mid-term Exam	15%
Final Exam	15%
<u>Comprehensive Case Project</u>	<u>20%</u>
Total	100%

Grades will be assigned according to the following scale:

A = 93 – 100%	B+ = 87 – 89.9%	C+ = 77 – 79.9%	D+ = 67 – 69.9%
A- = 90 – 92.9%	B = 83 – 86.9%	C = 73 – 76.9%	D = 63 – 66.9%
	B- = 80 – 82.9%	C- = 70 – 72.9%	D- = 60 – 62.9%

Mini-Case Projects (50%): Application of the quantitative decision-making tools and models discussed in class will be reinforced through frequent mini-case projects. These projects will provide you the opportunity to apply decision-making tools to real-world situations and arrive at actionable recommendations. The focus will be on the proper application of decision-making models as well as your ability to extract meaningful insights from these analyses. You will be expected to present your analyses / recommendations in a professional format, appropriate for a business environment. You also should be prepared to present your analyses and recommendations verbally in class. Only projects turned in on time will be accepted. Students are encouraged to collaborate on these mini-case projects, but remember that your performance on the examinations will require you to understand the application of these mini-case projects. (LO 1A, 1B)

Midterm Exam (15%): One midterm exam is scheduled. This exam will cover text chapters and/or quantitative modules covered up to the date of the midterm. No make-up midterm exams will be given. (LO 1A, 1B)

Final Exam (15%): The final will not be comprehensive. This exam will cover text chapters and/or quantitative modules covered between the midterm and the final exams. No make-up final exams will be given. (LO 1A, 1B)

Comprehensive Case Assignment (20%): The class will be divided into groups of 2-3 members each for a group case analysis or project. Case / Project topics will be selected by each group and should be based on a specific analytical tool / technique covered in class and applied to a real-world business situation or a case from the course text. Each group will submit a 5-7 page (double spaced, 12 point font, 1 inch margins) formal write-up of their case / project. This write-up will be graded on proper grammar and punctuation, overview of the topic and problem being addressed, description of the analytical tool(s) used to address the problem, application of the analytical technique used to address the problem, and a summary of findings / recommendations. Oral group presentations (20 - 30 minutes in length) are scheduled near the end of the term, and will provide a detailed presentation of the case, the analytical tools used, model developed, issues encountered, and conclusions reached. The oral presentation should

involve the entire group and include a formal presentation using PowerPoint or some other presentation tool. (LO 2A, 2B, 3A, 3B, 3C)

Course Schedule (Subject to Change)

Week Beginning	Subject	Reading Chapter	Assignment / Mini Case Due
Aug 19	"Management Science" discussion and definition The Modeling Process (Models vs. Modeling)	Chapter 1	- Read article " <u>Math Will Rock Your World</u> " - Mini-case: Examples of Analytics and Models
Aug 26	Spreadsheet modeling overview	Chapter 2	- Class discussion " <u>Math will Rock your World</u> " - Review / complete Excel Tutorial
Sep 2	Spreadsheet modeling overview	Chapter 2	Review / complete Excel Tutorial
Sep 9	Break even analysis	Ch. 2.4	To be assigned
Sep 16	NPV Modeling	Ch. 2.7	To be assigned
Sep 23	Queuing Modeling	Ch. 13	To be assigned
Sep 30	Regression and Forecasting Models	Ch. 14	To be assigned
Oct 7	Regression (Probit and Logit Models)		To be assigned
Oct 14	MID-TERM REVIEW / EXAM		
Oct 21	Inventory Management Models Economic Order Quantity News Vendor Model	Ch. 12	To be assigned
Oct 28	Constrained Optimization Introduction Types of Models Introduction Model Specifics Scheduling	Ch. 3	To be assigned
Nov 4	Constrained Optimization (Cont.) Model Specifics Blending	Ch. 4	To be assigned
Nov 11	Constrained Optimization (Cont.) Model Specifics Shortest Route	Ch. 5	To be assigned
Nov 18	Portfolio Management	Ch. 7.7	To be assigned
Nov 25	Misc. Topics THANKSGIVING HOLIDAY		
Dec 2	Comprehensive Case Project Presentations FINAL EXAM REVIEW		
Dec 9	FINAL EXAM (10am -12 noon)		

Important Course Information

DSC Academic Calendar: Please refer to <http://www.dixie.edu/reg/?page=calendar&yid=2013> for the Dixie State College 2013-14 Academic Calendar.

Prerequisites: If you have not completed the prerequisites for the class, please drop this course as soon as possible. If you have questions concerning the prerequisites, please contact the Business Advising Office.

Student Responsibilities: All students are expected to maintain professional behavior in the classroom setting, according to the Student Rights and Responsibilities Code (<http://www.dixie.edu/humanres/policy/sec5/533.html#behave>). Students have specific rights in the classroom as detailed in Section 1 of the Code. The Code also specifies proscribed conduct (Section 2) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content.

Faculty Responsibility: It is the faculty responsibility to enforce responsible classroom behaviors, and I will do so, beginning with verbal warning and progressing to dismissal from class and a failing grade. Students have the right to appeal such action per the Student Rights and Responsibilities Code

Canvas: You are required to frequently check the course Canvas page(s). Important class announcements and materials will be frequently posted to the course Canvas page(s).

Dmail: You are required to frequently check your dmail account. Important class and college information will be sent to your dmail account. This information includes your DSC bill, financial aid/scholarship notices, notification of cancelled classes, reminders of important dates and events, and other information critical to your success in this class and at DSC. All DSC students are automatically assigned a dmail account. If you don't know how to access your dmail account, go to www.dixie.edu and select "Dmail" from the left column. To locate your dmail username and password, go to www.dixie.edu, and click on "Log in to student services" or the "My Dixie" button.

Cell Phone and Computer Etiquette: Cell phones and pagers should be turned off during class. If you must have your phone on during class, please set it to silent mode (e.g., vibrate) and leave the classroom to answer any emergency calls. Computer usage is encouraged to take notes and follow the lecture. Computers should not be used during class to surf the web, answer email, chat, etc. I reserve the right to mark students down on quiz scores if they exhibit poor in-class cell phone and computer etiquette.

Disability: Students with medical, psychological, learning or other disabilities desiring reasonable academic adjustment, accommodations, or auxiliary aids to be successful in this class will need to contact the DISABILITY RESOURCE CENTER Coordinator (Baako Wahabu) for eligibility determination. Proper documentation of impairment is required in order to receive services or accommodations. DRC is located at the ground floor of the Financial Aid Office. Visit or call 652-7516 to schedule appointment to discuss the process. DRC Coordinator determines eligibility for and authorizes the provision of services.

General Disclaimer: Information contained in this syllabus may be subject to change with advance notice, during class time, as deemed appropriate by the instructor.

DSC Policy Links:

- Reference to "Policy for Absences Related to College Functions":
<http://www.dixie.edu/humanres/policy/sec5/523.html>

- Disruptive behavior policy / classroom expectations, academic dishonesty / academic integrity policy: <http://www.dixie.edu/humanres/policy/sec3/334.html>

DSC Resources:

- Available resources: Library, computer lab, writing center, testing center, tutoring center links
 - Library: <http://library.dixie.edu>
 - Computer labs: Located in the basement of the library, Smith Computer Center, and Udvar-Hazy Building room 200
 - Writing Center: http://dixie.edu/english/dsc_writing_center.php
 - Testing Center: <http://dixie.edu/testing>
 - Tutoring Center: <http://dsc.dixie.edu/tutoring>