

**Management 4040 - 01 (CRN – 46988)**  
**Quantitative Business Analysis**  
**Fall 2016**

Location and Time: Udvar Hazy 200  
Monday, Wednesday 11:00 am – 12:15 pm

Instructor: Dr. Scott Lindsey  
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Office and Hours: Udvar Hazy 342  
Monday, Wednesday: 1 – 2pm  
Tuesday, Thursday: 9 – 10 am, and by appointment

**Course Description:** Provides real-world decision-making tools commonly used within the finance, operations, marketing, and accounting functions of the modern enterprise with a practical, application-orientation building on the foundation of elementary statistics and decision modeling techniques. Includes 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. 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.

**Prerequisites:** STAT 2040 (Grade C- or higher)

**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 e-book. The e-book 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%

*No Extra Credit points will be available*

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 occasionally present and be graded on your analyses and recommendations in an oral format in class. **Only projects turned in on time will be accepted.** Students are encouraged to collaborate on these mini-case projects. However, what you turn in must reflect your own work and must not be a duplication of your class peers' work. Also 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 3-4 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 (15 - 20 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	Mini-Case Due (Mondays, unless specified)
Aug 22	"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 29	Spreadsheet modeling overview	Chapter 2	- Class discussion " <u>Math will Rock your World</u> " - Review / complete Excel Tutorial
Sep 5	<b>Holiday Sep 5 – NO CLASS</b> Spreadsheet modeling overview Break even analysis	Chapter 2 Ch. 2.4	Review / complete Excel Tutorial Example 2.2
Sep 12	NPV Modeling	Ch. 2.7	Problem 2.22
Sep 19	Queuing Modeling	Ch. 13	Problem 2.14, 2.16
Sep 26	Regression and Forecasting Models	Ch. 14	Problem 13.10, 13.20
Oct 3	Regression (Probit and Logit Models)		Problem 14.6, 14.19
Oct 10	MID-TERM REVIEW		To be assigned
Oct 17	MID-TERM EXAM – TESTING CENTER		
Oct 24	Inventory Management Models Economic Order Quantity News Vendor Model	Ch. 12	
Oct 31	Inventory Management Mini-Case Presentations		Problem 12.1, 12.2, 12.3 and Newsvendor Problem
Nov 7	Constrained Optimization Introduction Types of Models Introduction Model Specifics Product Mix	Ch. 3	
Nov 14	Constrained Optimization (Cont.) Model Specifics Blending	Ch. 4	Problem 3.28
Nov 21	Constrained Optimization (Cont.) Portfolio Management Nov 23-25 – Thanksgiving – NO CLASS	Ch. 7.7	Problem 4.48
Nov 28	Constrained Optimization (Cont.) Portfolio Management	Ch. 7.7	Dec 2 - Problem 7.63, 7.64
Dec 5	Comprehensive Case Project Presentations FINAL EXAM REVIEW		
Dec 14	FINAL EXAM (11:00 am – 1:00 pm)		

## **Important Course Information**

DSU Academic Calendar: Please refer to <http://www.dixie.edu/reg/?page=calendar&yid=2013> for the Dixie State University 2016-17 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 DSU 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 DSU. All DSU students are automatically assigned a dmail account. If you don't know how to access your dmail account, go to [www.dixie.edu](http://www.dixie.edu) and select "Dmail" from the left column. To locate your dmail username and password, go to [www.dixie.edu](http://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.

Title IX: DSU seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment/misconduct/assault we encourage you to report this to the college's Title IX Director, Cindy Cole, (435) 652-7731, [cindy.cole@dixie.edu](mailto:cindy.cole@dixie.edu). If you report to a faculty member, she or he must notify the Title IX Director about the basic facts of the incident.

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

DSU 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>

DSU 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://dixiewritingcenter.com>
  - Testing Center: <http://dixie.edu/testing>
  - Tutoring Center: <https://dixie.edu/tutoring/>