Course Description

Practical examination of quantitative analysis techniques in strategic business decision making and the management of production and service operations. Introduces tools such as forecasting, decision analysis simulation, linear programming, and project management. These quantitative techniques assist managerial decision making in finance, marketing, quality assurance, service, and human resources.

Prerequisites

None

Course Textbook


Course Learning Objectives

Upon completion of this course, students should be able to:

1. Summarize the steps of the quantitative analysis approach.
2. Identify and distinguish between the approaches to determining probability.
3. Distinguish the major differences between the normal distribution and the exponential and Poisson distributions.
4. Identify the major steps in decision making.
5. Identify and explain two criteria for making decisions under uncertainty.
6. Illustrate the various methods of decision making under risk.
7. Assess the differences between correlation and causation.
8. Generalize when simple linear regression and multiple regression techniques should be used.
9. Differentiate between the various types of forecasting models.
10. Identify the most fundamental problems of inventory control.
11. Summarize the typical applications of linear programming.
12. Discriminate between PERT and CPM's similarities and differences.

Credits

Upon completion of this course, the students will earn three (3) hours of college credit.

Course Structure

1. **Unit Learning Objectives**: Each unit contains learning objectives that specify the measurable skills and knowledge students should gain upon completion of the unit.
2. **Unit Summaries**: Each unit contains an overview, or summary, of the information to be covered.
3. **Reading Assignments**: Each unit contains reading assignments from one or more chapters from the textbook.
4. **Key Terms**: Key terms are intended to guide students in their course of study. Students should pay particular attention to key terms as they represent important concepts within the unit material and reading.
5. **Discussion Boards**: Discussion Boards are a part of all CSU term courses. Information and specifications regarding these assignments are provided in the Academic Policies listed in the Course Menu bar.

6. **Unit Assessments**: This course contains eight unit assessments, one to be completed at the end of each unit.

7. **Case Studies**: These assignments appear in Units III and V. Information and specifications can be found below.

8. **Final Exam (proctored)**: Students are to complete a final exam in Unit VIII. All final exams are proctored – see below for additional information. You are permitted four (4) hours to complete this exam, in the presence of your approved proctor. This is an open book exam. Only course textbooks and a calculator, if necessary, are allowed when taking proctored exams.

9. **Ask the Professor**: This communication forum provides you with an opportunity to ask your professor general or course content related questions.

10. **Student Break Room**: This communication forum allows for casual conversation with your classmates.

**Case Study 1 (Unit III)**

Read the Case Study entitled: “Forecasting Attendance at SWU Football Games” on p. 194 of the textbook, and answer all of the questions at the end of the case.

In completing these assignments the University requires that you follow APA guideline in preparing citations and references. There is no specific work limit; however, responses are to be complete and succinct.

**Case Study 2 (Unit V)**

Read the Case Study entitled: “Chase Manhattan Bank” on pages 348-349 of the textbook and answer all of the questions at the end of the case.

In completing these assignments the University requires that you follow APA guideline in preparing citations and references. There is no specific work limit; however, responses are to be complete and succinct.

**APA Guidelines**

CSU requires that students use the APA style for papers and projects. Therefore, the APA rules for formatting, quoting, paraphrasing, citing, and listing of sources are to be followed. A document titled “APA Guidelines Summary” is available for you to download from the APA Guide Link, found in the Learning Resources area of the myCSU Student Portal. It may also be accessed from the Student Resources link on the Course Menu. This document provides links to several internet sites that provide comprehensive information on APA formatting, including examples and sample papers.

**CSU Grading Rubric for Papers/Projects**

The course papers will be graded based on the CSU Grading Rubric for all types of papers. In addition, all papers will be submitted for electronic evaluation to rule out plagiarism. Course projects will contain project specific grading criteria defined in the project directions. To view the rubric, click the Academic Policies link on the Course Menu, or by accessing the CSU Grading Rubric link, found in the Learning Resources area of the myCSU Student Portal.

**Final Examination Guidelines**

Final examinations are to be administered to students by an approved proctor on a date that is mutually convenient. The student is responsible for selecting a qualified proctor that must be approved by the university.

A list of acceptable proctors is provided in the Examination Proctor Policy. To review the complete Examination Proctor Policy including a list of acceptable proctors, proctor responsibilities, proctor approval procedures and the Proctor Agreement Form, go to the MyCSU Student Portal from the link below.

http://mycsu.columbiasouthern.edu
Proctored Final Exams are taken online. To request your proctored final exam, select the designated links found in the online course. You are permitted four (4) hours to complete this exam, in the presence of your approved proctor. This is an open book exam. Only course textbooks and a calculator, if necessary, are allowed when taking proctored exams.

**Communication Forums**

These are non-graded discussion forums that allow you to communicate with your professor and other students. Participation in these discussion forums is encouraged, but not required. You can access these forums with the buttons in the Course Menu. Instructions for subscribing/unsubscribing to these forums are provided below.

[Click here for instructions on how to subscribe/unsubscribe and post to the Communication Forums.](#)

**Ask the Professor**

This communication forum provides you with an opportunity to ask your professor general or course content questions. Questions may focus on Blackboard locations of online course components, textbook or course content elaboration, additional guidance on assessment requirements, or general advice from other students.

Questions that are specific in nature, such as inquiries regarding assessment/assignment grades or personal accommodation requests, are NOT to be posted on this forum. If you have questions, comments, or concerns of a non-public nature, please feel free to email your professor. Responses to your post will be addressed or emailed by the professor within 48 hours.

Before posting, please ensure that you have read all relevant course documentation, including the syllabus, assessment/assignment instructions, faculty feedback, and other important information.

**Student Break Room**

This communication forum allows for casual conversation with your classmates. Communication on this forum should always maintain a standard of appropriateness and respect for your fellow classmates. This forum should NOT be used to share assessment answers.

**Grading**

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Unit Assessments (8 @ 6.75%)</td>
<td>= 54%</td>
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<tr>
<td>Discussion Boards (8 @ 2%)</td>
<td>= 16%</td>
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<tr>
<td>Case Studies (2 @ 10%)</td>
<td>= 20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>= 10%</td>
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<tr>
<td><strong>Total</strong></td>
<td>= <strong>100%</strong></td>
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**Course Schedule/Checklist (PLEASE PRINT)**

The following pages contain a printable Course Schedule to assist you through this course. By following this schedule, you will be assured that you will complete the course within the time allotted.
By following this schedule, you will be assured that you will complete the course within the time allotted. Please keep this schedule for reference as you progress through your course.

<table>
<thead>
<tr>
<th>Unit I</th>
<th>Introduction to Quantitative Analysis</th>
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<tbody>
<tr>
<td>Review:</td>
<td>□ Unit Study Guide</td>
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</tbody>
</table>
| Read:           | □ Chapter 1: Introduction to Quantitative Analysis  
|                 | □ Chapter 2: Probability Concepts and Applications  |
| Discuss:        | □ Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)  |
| Submit:         | □ Assessment by Tuesday, Midnight (Central Time)  |

<table>
<thead>
<tr>
<th>Unit II</th>
<th>Decision Analysis and Regression Models</th>
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<tr>
<td>Review:</td>
<td>□ Unit Study Guide</td>
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</tbody>
</table>
| Read:           | □ Chapter 3: Decision Analysis          
|                 | □ Chapter 4: Regression Models           |
| Discuss:        | □ Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)  
|                 | □ Discussion Board Comment: Comment on another student's Discussion Board response by Tuesday, Midnight (Central Time)  |
| Submit:         | □ Assessment by Tuesday, Midnight (Central Time)  
|                 | □ Proctor Approval Form                  |

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<th>Forecasting</th>
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<tr>
<td>Review:</td>
<td>□ Unit Study Guide</td>
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<tr>
<td>Read:</td>
<td>□ Chapter 5: Forecasting</td>
</tr>
</tbody>
</table>
| Discuss:        | □ Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)  
|                 | □ Discussion Board Comment: Comment on another student's Discussion Board response by Tuesday, Midnight (Central Time)  |
| Submit:         | □ Assessment by Tuesday, Midnight (Central Time)  
|                 | □ Case Study 1 by Tuesday, Midnight (Central Time)  |

Notes/Goals:
### Unit IV
**Inventory Control Models**

| Review: | ☐ Unit Study Guide |
| Read: | ☐ **Chapter 6**: Inventory Control Models |
| Discuss: | ☐ **Discussion Board Response**: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time) |
| | ☐ **Discussion Board Comment**: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time) |
| Submit: | ☐ **Assessment** by Tuesday, Midnight (Central Time) |

**Notes/Goals:**

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### Unit V
**Linear Programming Models**

| Review: | ☐ Unit Study Guide |
| Read: | ☐ **Chapter 7**: Linear Programming Models: Graphical and Computer Methods |
| | ☐ **Chapter 8**: Linear Programming Modeling Applications with Computer Analysis in Excel and QM for Windows |
| | ☐ **Chapter 9**: Linear Programming: The Simplex Method |
| Discuss: | ☐ **Discussion Board Response**: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time) |
| | ☐ **Discussion Board Comment**: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time) |
| Submit: | ☐ **Assessment** by Tuesday, Midnight (Central Time) |
| | ☐ **Case Study 2** by Tuesday, Midnight (Central Time) |

**Notes/Goals:**

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### Unit VI
**Transportation and Assignment Models**

| Review: | ☐ Unit Study Guide |
| Read: | ☐ **Chapter 10**: Transportation and Assignment Models |
| Discuss: | ☐ **Discussion Board Response**: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time) |
| | ☐ **Discussion Board Comment**: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time) |
| Submit: | ☐ **Assessment** by Tuesday, Midnight (Central Time) |

**Notes/Goals:**
### Unit VII: Network Models and Project Management

**Review:**
- Unit Study Guide

**Read:**
- Chapter 12: Network Models
- Chapter 13: Project Management

**Discuss:**
- Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)
- Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time)

**Submit:**
- Assessment by Tuesday, Midnight (Central Time)
- Request To Take Final Exam

**Notes/Goals:**

### Unit VIII: Simulation Modeling and Markov Analysis

**Review:**
- Unit Study Guide

**Read:**
- Chapter 15: Simulation Modeling
- Chapter 16: Markov Analysis

**Discuss:**
- Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)
- Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time)

**Submit:**
- Assessment by Tuesday, Midnight (Central Time)
- Final Exam

**Notes/Goals:**