DS 71 QUANTITATIVE ANALYSIS (3 Units)
California State University, Fresno – SPRING 2014

Instructor: Robert Goulart

Office: PB 542
Office Hours: 1:00 to 2:00 MTWThF
Telephone/Voice Mail: 278-4991
Email: robertgoulart@csufresno.edu
and by appointment

COURSE DESCRIPTION AND PREREQUISITES:
Quantitative formulation and solution of problems in various disciplines, including mathematics of finance, linear programming, probability, and differential calculus. G.E. Foundation B4.

PREREQUISITES: No student shall be admitted to DS 71 without taking the Entry Level Mathematics Test (ELM); students who do not pass the exam must record a grade of C or better in a college-taught intermediate algebra course. Students who are exempt must provide proof of exemption from the ELM test as detailed in the CSU Fresno General Catalog.

PRIMARY GOALS OF DS 71
This course is designed to provide students with the knowledge and skills necessary:
1. To familiarize the student with the mathematical concepts involved in the formulation and solution of various quantitative models. Applications will be developed in a variety of disciplines.
2. To motivate the student to utilize the powerful tools of quantitative analysis to sharpen his or her decision-making skills.
3. To appreciate the value of quantitative models in decision-making.
4. To appreciate some historical perspective on the development of key quantitative methods and associated tools.
5. To understand the time value of money.
6. To appreciate the role of risk in decision-making.

REQUIRED MATERIALS
  - Be sure to buy only one of the above if you buy anywhere off-campus. Older editions (including the international version) do not include all of the material and problems we use.
- Calculator with which you can perform: +, −, •, ÷, ex, yx, ln x, √x,  x, s or σn−1
  - The textbook provides instructions and tips for using the TI-83, TI-83+ and TI-84 series
  - You are responsible for knowing how to operate the calculator you use
  - The instructor does NOT provide "loaner" calculators
- 888E Scantrons (these are 8X10 sized, not the normal 1/2 sheet)
- Access to Blackboard and the Internet

Many materials may only be provided on Blackboard or the Internet. It is your responsibility to access, read, and/or print materials as needed.

Students are required to bring paper, a pencil, the textbook, and a calculator to ALL class meetings.
STUDENT LEARNING OBJECTIVES

• Evaluate, graph, and determine specific information from linear, quadratic, exponential, and logarithmic functions and their applications. Polynomial and rational functions may be included at the direction of the instructor.

• Evaluate and interpret specific applications of functions in market supply, demand, and equilibrium points; revenue, cost, profit and break-even analysis; and exponential growth and decay models.

• Analyze financial arrangements based on simple interest in present and future values or on simple discounting.

• Understand and determine the time value of money in present and future values as they relate to compound interest in both lump sum and on payment schedules. Students will be able to evaluate the costs and benefits of investor and consumer applications of compound interest as well as determine the effective interest rate and amortization of fixed rate loans.

• Determine algebraic solutions to systems of equations or inequalities, and construct and interpret geometric solutions to systems of equations or inequalities. Matrix representations, operations, and solution to systems of equations may be included at the direction of the instructor.

• Translate verbal statements of linear programming problems into their appropriate standard forms; find, identify, and interpret graphically their appropriate feasible solution sets, evaluate objective functions over feasible solution spaces, and identify a greatest or least solution. Matrix operations involved in the Simplex Method may be included at the direction of the instructor.

• Understand and define the concept of probability in terms of the sample space of events. Construct and interpret contingency tables, Venn diagrams, and tree diagrams.

• Use the understanding of complementary, mutually exclusive, dependent and independent events to calculate probabilities of simple, compound, and conditional events.

• Use Bayes’ Theorem to compute conditional probabilities.

• Understand and determine the number of permutations and combinations of n things selected r at a time, and use that understanding to compute the probability of an event.

• Understand what is meant by a Bernoulli process and how this applies to the consecutive trials associated with the binomial distribution.

• Determine the probability that a binomial variable will have a given value or a value in a given range. Expected values and Markov chains may be included at the direction of the instructor.

• Analyze and distinguish between the average rate of change between two points on the graph of a function and the instantaneous rate of change at a given point on the graph of a function.

• Use the power rule to obtain the derivative of a polynomial function, and evaluate the derivative at a point. Optimization problems may be included at the direction of the instructor.
EMAIL AND CLASS COMMUNICATION
Your Fresno State email is considered the official campus email communication method. That is the only email address you should use to communicate with the instructor or the campus. Treat it like a job email address and check the account regularly for information or messages.

Non-Fresno State email accounts are used at your own risk. Non-Fresno State accounts may not pass University spam filters. The instructor may also choose for security reasons to NOT open email sent from any account except a Fresno State address. Emails not received by the instructor or unread due to use of an improper email account will be considered late or not received.

The subject line in emails to the instructor should use as the subject line – “DS 71 – course time” then the topic of the email. i.e. DS 71 – 1:00 MWF Homework Question.

ATTENDANCE
This course consists of textbook readings, web materials, lectures, in-class assignments, and homework. It is important you avoid missing class sessions since some material may only be provided during lecture.

If you are unable to attend class you must notify me before missing class. You should email me at robertgoulart@csufresno.edu or leave a message on my voice mail at 278-4991. Not notifying me before the class session voids any reason you may have for missing class.

You should also obtain notes from a classmate for the day(s) you. Be sure to check for announcements about assignments, changes in assignments or in this syllabus (see SUBJECT TO CHANGE at the end of the syllabus). The Instructor does not guarantee that information/announcements made in class will appear on Blackboard. It is your responsibility to check with a classmate.

Missed in-class assignments cannot be made up.

COURSE EVALUATION
Student evaluation in this course will be based on in and out of class assignments, announced and unannounced quizzes, 4 cumulative midterm exams, and a comprehensive final exam.

Students are required to bring a pencil, the textbook, and a calculator to ALL class meetings. It is the student’s responsibility to be able to operate the calculator efficiently. The instructor does not carry a “loaner calculator”. NO SHARING OF CALCULATORS ALLOWED DURING EXAMS.

QUIZZES - The course may include in-class quizzes along with online quizzes administered using Blackboard. Missed in-class quizzes may not be made up if missed. Online quizzes will be available over a multiple day time frame. Students may take online quizzes anytime during the available time frame up to the last instructional day of the semester. The instructor may give announced and unannounced quizzes.

IN-CLASS ASSIGNMENTS. The design of this course will regularly involve a considerable amount of student activity during the class meetings in the form of in-class assignments. In-Class Assignments will be collected and graded on a credit/no credit basis. Students who have completed the homework
assignments should find these exercises straightforward. **In-class assignments may not be made up if missed.**

**HOMEWORK ASSIGNMENTS** should be completed by the dates indicated. Homework may or may not be collected for grading on a credit/no credit basis. It is your responsibility to complete homework assignments and have them ready for possible submission on the day they are due.

Homework is due at the **START** of class. Late assignments **may not** be accepted at the instructor’s discretion. If accepted, late work will be penalized.

Specific information for completing assignments will be given to you in class.

- You may work on the homework with other students. However, you are expected to prepare a completed copy in your own handwriting. Photocopies of homework **will not** be accepted.
- It is important that you complete each assignment by the due date. Falling behind or putting off the homework may add to your confusion and stress when you try to catch up all at once.
- If you find that you are having problems understanding a section, the instructor recommends you complete additional problems in the textbook.

**MIDTERMS** There are tentatively scheduled **four (4)** cumulative midterm exams during the semester. The instructor reserves the right to change the number of exams. Estimated weeks when exams will occur are shown on the Tentative Schedule.

Midterms are **comprehensive**. This is to help you maintain your knowledge and skills for the final exam.

Unless a student has received **prior consent**, the instructor may choose to not allow a makeup exam. **Prior consent** means that the student has discussed known absences with the professor **in advance of the date** in question and alternate plans have been approved. **Placing a voice or electronic mail message to the professor in and of itself does not constitute prior consent.**

If you will be missing an exam due to a campus related function you should be aware of the date conflict. You must schedule a time to take a makeup exam **BEFORE** the exam is given.

If you will miss an exam due to illness or other reason, you must inform me of your absence by phone or email **BEFORE** the exam starts. **Not notifying me before the exam begins may void any reason you have for missing class.** The instructor reserves the right to require documentation of the reason for your absence before allowing you to take a makeup exam. If you cannot provide documentation the instructor may choose to not allow you to take a makeup exam.

Makeup exams will (if approved) be given at a time and place to accommodate the instructor’s schedule. While the instructor will attempt to work with a student to set a mutually agreed day and time for a makeup exam, it is ultimately the student’s responsibility to determine how to rearrange their own schedule to meet the instructor’s time and deadline restrictions for scheduling a makeup exam. **Campus policy calls for makeup exams to be completed “as soon as practicable.”** (APM 232)

Exams and makeup exams for this course are never given in the campus testing center.
FINAL The final examination will be comprehensive and will be given when scheduled in the University's Schedule of Classes. You must take your final exam during the time scheduled for your section unless prior approval of the instructor has been received.

Calculators may NOT be shared during exams. The Instructor has no “loaners.”

GRADING

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<thead>
<tr>
<th>Components</th>
<th>Grade</th>
<th>Grading Scale</th>
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<tbody>
<tr>
<td>Assignments &amp; Quizzes</td>
<td>15%</td>
<td>Over 90% = A</td>
</tr>
<tr>
<td>Midterm Exams (4)</td>
<td>60%</td>
<td>80-89% = B</td>
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<tr>
<td>Final Examination</td>
<td>25%</td>
<td>70-79% = C</td>
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<tr>
<td>TOTAL</td>
<td>100%</td>
<td>60-69% = D</td>
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<td></td>
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<td>Below 60% = F</td>
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SUPPORTNET Our campus has developed SupportNet to connect students with specific campus resources promoting academic success. I have agreed to participate in this program and may refer you to it if I believe you need the services provided by SupportNet to succeed in this course.

ACADEMIC HONESTY POLICY

Honor Code: “Members of the CSU Fresno academic community adhere to principles of academic integrity and mutual respect while engaged in university work and related activities.” You should:

a) understand or seek clarification about expectations for academic integrity in this course (including no cheating, plagiarism and inappropriate collaboration)

b) neither give nor receive unauthorized aid on examinations or other course work that is used by the instructor as the basis of grading.

c) take responsibility to monitor academic dishonesty in any form and to report it to the instructor or other appropriate official for action.

Students may be required to sign a statement at the end of all exams and assignments stating “I have done my own work and have neither given nor received unauthorized assistance on this work.”

“Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so.

Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means.”

“Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work.”

Cheating and plagiarism will be dealt with according to the university policies. Penalties for cheating and plagiarism range from an F on the particular assignment, through an F for the course, to expulsion from the university. For information on the policies refer to the University Catalog or Class Schedule.
A few examples (but not all situations) of cheating and plagiarism include:

- Transmitting electronically to another student information during an exam period
- Using “cheat sheets” or “crib notes” during an exam unless allowed by the instructor
- Storing/accessing course materials in a calculator or computer that can be used during an exam
- Sharing test questions with students in another section of the course
- Lying about the reason for not taking a test or submitting an assignment on time
- Allowing another student to copy from your test paper
- Employing signals to indicate answers on an exam to others
- TAKING/SHARING/USING PICTURES, SCREEN PRINTS, ETC. OF ONLINE QUIZZES

The instructor considers cheating and plagiarism to be SERIOUS academic and professional offenses. Do not jeopardize your career.

COPYRIGHT POLICY
Copyright laws and fair use policies protect the rights of those who have produced the material. The copy in this course has been provided for private study, scholarship, or research. Other uses may require permission from the copyright holder. The user of this work is responsible for adhering to copyright law of the U.S. (Title 17, U.S. Code). To help familiarize yourself with copyright and fair use policies, the University encourages you to visit its copyright web page:
http://www.csufresno.edu/library/about/policies/docs/copyrtpolicyfull.pdf

Technology Innovations for Learning & Teaching (TILT) course web sites (including Blackboard) contain material protected by copyrights held by the instructor, other individuals or institutions. Such material is used for educational purposes in accord with copyright law and/or with permission given by the owners of the original material. You may download one copy of the materials on any single computer for non-commercial, personal, or educational purposes only, provided that you (1) do not modify it, (2) use it only for the duration of this course, and (3) include both this notice and any copyright notice originally included with the material. Beyond this use, no material from the course web site may be copied, reproduced, re-published, uploaded, posted, transmitted, or distributed in any way without the permission of the original copyright holder. The instructor assumes no responsibility for individuals who improperly use copyrighted material placed on the web site.

STUDENTS WITH DISABILITIES
Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in the Henry Madden Library, Room 1202 (278-2811).

COURSE POLICIES
- Students are required to not be working on other assignments during lectures.
- If you have to leave early, be considerate and let the instructor know ahead of time and try to minimize disruption to the class as you leave.
- Please don’t carry on personal conversations or goof off during class. Both are very disruptive to students sitting around you and the speaker.
- Students using laptops during the class for anything other than this class may be asked to close the computer and/or leave the class.
- Information provided only during lectures by the instructor or guest lecturers may appear on the exams or final. The book is NOT your only source.
- Use of tobacco products of any type is strictly prohibited in the classroom.
STUDENT CONDUCT
"The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. ... Differences of viewpoint or concerns should be expressed in terms which are supportive of the learning process, creating an environment in which students and faculty may learn to reason with clarity and compassion, to share of themselves without losing their identities, and to develop and understanding of the community in which they live."

**Conduct that disrupts the classroom environment will not be tolerated and may lead to disciplinary action and/or removal from the class.**

ELECTRONIC DEVICES (CELL PHONES, PAGERS, MP3 PLAYERS, ETC.)
As a courtesy to all, please turn off all electronic devices (MP3 players, cell phones, etc). If you must take a call please exit the classroom. If there is a reason you need an electronic device on, please see me.

**NO electronic devices (EXCEPT YOUR CALCULATOR) will be permitted during tests. Cell Phones and PDAs may NOT be used as a calculator.**

It is proper professional etiquette to turn off cell phones and pagers while attending any type of meeting in the workplace. You should also remove headphones, earplugs, and ear buds. This is a sign of respect for the time of all participants and the importance of the meeting.
# TENTATIVE SCHEDULE AND ASSIGNMENTS

Students are required to bring a pencil, the textbook, and a calculator to ALL class meetings.

<table>
<thead>
<tr>
<th>Schedule For Week Of</th>
<th>TOPICS, ASSIGNMENTS, &amp; EXAMS (Specific exam dates to be announced)</th>
<th>NOTES AND HOLIDAYS</th>
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<tbody>
<tr>
<td>Jan 12 to Jan 18</td>
<td>Course Intro - FRIDAY JANUARY 17 Chapter 1 - (No lecture on this chapter. But it is your responsibility to read and know the concepts. This chapter reviews concepts you should already know but will need to remember in order to do well in this course.)</td>
<td>Semester begins Thurs Jan 16</td>
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<tr>
<td>Jan 19 to Jan 25</td>
<td>Skill Assessment Diagnostic Chapters 2.1, 2.2, 2.3, 2.4</td>
<td>HOLIDAY Monday Jan 20 Martin Luther King Day</td>
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<tr>
<td>Jan 26 to Feb 1</td>
<td>Chapters 3.1, 3.2, 3.3, 3.4 FERPA FORM DUE BY FRI January 31</td>
<td>Thursday Jan 30 Last day to ADD CLASSES without instructor permission</td>
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<tr>
<td>Feb 2 to Feb 8</td>
<td>Chapters 4.1, 4.2 Midterm Exam 1 Chapters 1, 2, 3 Announced Exam Date ________</td>
<td>Thursday Feb 13 Last day to: ADD CLASSES with permission DROP a course on-line without a serious and compelling reason and without a grade of &quot;W&quot; listed on transcript. Change to/from credit /no credit grade</td>
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<tr>
<td>Feb 9 to Feb 15</td>
<td>Chapters 4.3, 4.4, 5.1 Blackboard Support Materials</td>
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<tr>
<td>Feb 16 to Feb 22</td>
<td>Chapters 5.2, 5.3, 5.4 Blackboard Support Materials</td>
<td>HOLIDAY Monday Feb 17 President’s Day</td>
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<tr>
<td>Feb 23 to Feb 29</td>
<td>Chapters 6.1 Midterm Exam 2 Chapters 4 &amp; 5 Announced Exam Date ________</td>
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<td>Mar 1 to Mar 8</td>
<td>Chapters 6.3, 6.4</td>
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<td>Mar 9 to Mar 15</td>
<td>Chapters 7.1, 7.2, 7.3</td>
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<tr>
<td>Mar 16 to Mar 22</td>
<td>Chapters 8.1 Midterm Exam 3 Chapters 6 &amp; 7 Announced Exam Date</td>
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<tr>
<td>Schedule For Week Of</td>
<td>TOPICS, ASSIGNMENTS, &amp; EXAMS (Specific exam dates to be announced)</td>
<td>NOTES AND HOLIDAYS</td>
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<td>Mar 23 to Mar 29</td>
<td>Chapters 8.2, 8.3</td>
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<td>Mar 30 to Apr 5</td>
<td>Chapters 8.4, 8.5</td>
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<td>Apr 6 to Apr 12</td>
<td>Chapters 8.6, 9.1, 9.2</td>
<td>HOLIDAY</td>
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<td>Cesar Chavez Day</td>
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<td>Friday, April 11</td>
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<td>– Last day to seek approval to drop a class for SERIOUS and COMPELLING reasons, EXCEPT by complete withdrawal from the university for circumstances beyond the student’s control (Spring Break limits ability to get signatures before official campus deadline next week)</td>
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<td>Apr 13 to Apr 19</td>
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<td>SPRING BREAK</td>
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<td>Apr 20 to Apr 26</td>
<td>Chapters 9.3, 9.4, 9.6</td>
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<td>Apr 27 to May 3</td>
<td>Chapters 11.1, 11.3, 11.4</td>
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<td>Midterm Exam 4 Chapters 8 &amp; 9</td>
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<td></td>
<td>Announced Exam Date</td>
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<tr>
<td>May 4 to May 10</td>
<td>Chapters 11.1, 11.3, 11.4</td>
<td>May 8 &amp; 9</td>
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<td></td>
<td>SUPPORT QUizzes NOT AVAILABLE AFTER WEDNESDAY MAY 8</td>
<td>Final exam preparation and faculty consultation days (Dead Days)</td>
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<td>Review</td>
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<tr>
<td>May 12 to May 15</td>
<td>Finals – Refer to the University Schedule of Courses or the in-class announcement for the Date &amp; Time of your final</td>
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<td></td>
<td>Students - Write the Day and Time for this class here:</td>
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</table>

**SUBJECT TO CHANGE**

*This Syllabus and Course Schedule are subject to change.* Announcements regarding changes in assignments and/or the course schedule will be made in class. Students are encouraged to note the changes on this syllabus. If you are absent from class, it is your responsibility to check on announcements made while you were absent.