DS 101-10: Data Analysis for Managers

COURSE SYLLABUS

General Information
Instructor: Dr. Jaime R. Alveyay
Office: TAH - 2050
Office Hours: Wednesdays 4:30 – 6:00 p.m. and Thursdays 4:00 - 5:30 p.m.
Telephone: 278 – 6510
Course Website: https://sacct.csus.edu/
E-mail: Course related e-mail messages must be sent through SacCT mail.
Class Location and time: Online & DLN 1004 (on 1/29 from 6:00 to 8:00 p.m.)

Course Characteristics
This is an online course; thus, there are no face-to-face class sessions with the exception of the
Orientation Session on January 29 from 6:00 to 8:00 p.m. in DLN 1004. Interaction between the
instructor and students takes place mainly through chat rooms, discussion boards, and e-mail. Thus, you
must be prepared to read/study many pages, discussion threads, and e-mail messages. This work must be
done every week; therefore, motivation to succeed, good time management skills, and considerable self-
discipline are critical success factors in this type of course. Good written communication skills are also
necessary. You are expected to move through the course material at the rate of approximately one chapter
per week.

Minimum requirements for students to participate in this type of course include access to and an
understanding of the workings of computers, Internet browsers, and SacCT.

Catalog Description
A second course in business statistics that focuses on the application of statistical methods to business
problems. Emphases are placed on case studies, data analysis, model building techniques, statistical
reasoning, and communications of statistical results. A statistical computer package will be used in the
course. Prerequisites: MATH 24 and STAT 1. 3 units

Course Procedures and Requirements

Required Resources
Access to SacCT
This course is delivered via the Web-based course management system, SacCT. This system provides a
closed, secure environment. Your class is only accessible to registered students, the instructor, and the
SacCT administrator. You will need a SacLink account to login into SacCT. To access SacCT:
1. Open your Web browser -- (Internet Explorer or Firefox, for example).
2. Go to the SacCT Web page (https://sacct.csus.edu/)
3. Click on SacCTLogin.
4. Enter your SacLink Username.
5. Enter your SacLink password for the password.

If you are new to SacCT, go to "Student Resources" where you will find links to instructions, tutorials,
and handouts (http://www.csus.edu/sacct/student/index.stm).

1 You are expected to be familiar with the contents of this syllabus.
Should you have problems with SacCT contact the University “Help Desk” at (916) 278-7337.

**Textbook**


Two options to acquire these materials are:

a) A black & white print with spiral binding including the chapters to be covered in the course + Connect Plus Access Card is available in the Hornet Bookstore. ISBN: 978121583979

b) Lind et. al. Connect Plus Access Card for Statistical Techniques in Business and Economics 15E. Includes a Connect access card and the e-book. This item can be purchased through Connect using the link available in SacCT.

**Connect**

Connect Business Statistics is an online assignment and assessment system integrated with your textbook. In this course exams, quizzes and homeworks problems will be given using Connect.

If you purchased the textbook in the Hornet Bookstore or Connect + you already have the access code. If you choose to purchase the textbook elsewhere, you will have to purchase the Connect code separately. Before buying/registering please read the document *Connect Access Code - Read before purchasing/redeeming it*, available in the "Information" folder in SacCT.

**Statistical Software**

In this class, the textbook and the instructor use Excel to perform statistical analysis. However, if you have a working knowledge of a statistical package (e.g., E-Views, JMP, Minitab, SAS, SPSS, and StatGraphics) you can use it. You should have a working knowledge of Excel since this software is covered in MIS 2.² *It is your responsibility to know the fundamentals of Microsoft Excel.* For a review of Excel 2007 fundamentals go to the "Course Content" folder in SacCT and click on the "Excel - Essential Resources" link.

If you use Windows as an operating system, you will notice that Excel includes an add-in called Analysis ToolPak. We will use this add-in during the semester. Regrettfully, students have told me that the last versions of Excel for the Mac do not include this add-in.

**Supplementary Resources**

**MegaStat**

MegaStat performs statistical analysis within MS Excel and extends its statistical capabilities. You can purchase this add-on directly from the Online Learning Center (OLC); the price is $12.00. Through the OLC you can access the MegaStat User's Guide and the MegaStat ScreenCam Tutorials. Be aware that this add-in does not work with the Apple operating system.

**Online Learning Center (OLC)**

The OLC gives you access to materials that may help you learn the concepts presented in the textbook. You can access the OLC using a link available in the “Course Content” folder in SacCT. The OLC has two sections:

² All business majors and pre-majors shall demonstrate computer literacy and competency *prior* to taking 100-level courses.
- Course-wide contents, and
- Chapter specific contents

The Course-wide content section includes links to:

- Data Sets
- Data Files
- Appendices (A & B)
- MegaStat Website

The chapter specific content section is organized by chapter (drop-down menu) and for each chapter you will find:

- Data Files
- Power Point slides (standard and narrated)
- Guided Examples
- Quiz (self-test)

**Calculator**

A calculator, financial or scientific, may be useful unless you plan to do all the calculations in Excel. *It is your responsibility to know how to use your calculator and Excel.*

**Course Work**

You must be prepared to read/study many pages and discussion threads, and some e-mail messages. This work must be done regularly. Thus, this type of course requires considerable self-discipline.

You are expected to move through the course material at the rate of approximately one chapter per week. Thus, every week you must do the work assigned in the Course Outline section of this syllabus and for every chapter you should do the following:

1. Study the assigned chapter and the corresponding postings in the Course Content section of the Discussion Board(s);
2. Take the self-tests quiz (Online Learning Center, SacCT) \(^3\)
3. Answer the practice assignment(s);
4. Review the answers to the practice assignment(s) provided by the instructor;
5. Answer homework assignment(s) (Connect)

Depending on your study preferences and prior experiences with quantitative material, you could also listen to the narrated Power Point slides. \(^4\) Should you have questions about topics presented in a chapter post them in the appropriate forum in the “Discussion Forum/Course Content Forums” folder in SacCT. This is the primary method of communication with your instructor and classmates. For more information about the discussion forums go to Appendix A, Discussion Board(s).

People rarely learn well when they try to cover all of the course material in one or two big ‘cram’ sessions (especially in the days right before an exam). My experience with previous sections indicates that this approach has negatively affected student performance. Most of the topics covered in the course build on one another; thus, it is important that you keep up to date. If you find yourself falling behind, I encourage you to set aside enough time to ‘catch up’ before the problem becomes larger. If you are not able to set

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\(^3\) There is one self-test quiz for every chapter. Self-tests can be accessed in the Online Learning Center after selecting the appropriate chapter. Self-tests are online quizzes that allow you to test your knowledge of course content. Self-tests are purely for your own benefit. Although you receive a score, only you know the score and you may take test as many times as you like. When you are done click “Submit Answers” and the system will give you a score and clearly identify correct and incorrect answers.

\(^4\) The narrated slides are not identical to the student slides.
aside enough time to catch up, you may want to reassess whether this is the best format or time for you to take this course.

**Practice Assignments**

The purpose of these assignments is to help you understand the material, apply it to business situations, and help you prepare for the graded assignments: exams and homeworks. Thus,

- there is no deadline to submit them to the instructor, and they will not be graded; and
- you should attempt to answer a practice assignment only after you have studied the assigned chapter.

There is a practice assignment for every chapter covered in this course. A hardcopy of each practice assignment will be available in the “Practice Assignments” sub-folder in the “Course Content” folder in SacCT. Availability of the practice assignments will be announced through SacCT’s “Announcements” tool.

No later than four working days after the initial posting a hardcopy of answers will be available in the sub-folder “Answers to Practice Assignments” in the “Course Content” folder in SacCT. Availability of the answers to each practice assignment will be announced via SacCT e-mail.

**Grading**

Your final grade in this course will be calculated using the following distribution:

<table>
<thead>
<tr>
<th>Item</th>
<th>Number</th>
<th>Points</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-term #1</td>
<td>1</td>
<td>250</td>
<td>25</td>
</tr>
<tr>
<td>Mid-term #2</td>
<td>1</td>
<td>250</td>
<td>25</td>
</tr>
<tr>
<td>Final (Comprehensive)</td>
<td>1</td>
<td>250</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1000</td>
<td>100</td>
</tr>
</tbody>
</table>

**Homework**

During the semester, you will be given 10 homeworks. Homework completion is worth 25% of the final grade (e.g., 250 points). This work must be done individually in Connect. Availability of each homework will be announced through SacCT’s “Announcements” tool.

You must complete each homework by the due date to get credit, no exceptions. This means you will not receive credit for problems completed after the due date in Connect or for hardcopy submissions. An incomplete homework submitted by the due date will receive partial credit. A “Homework Calendar” is posted in the “Information” folder in SacCT.

Each homework may include a combination of static (one set of numbers and one answer) or algorithmic (every time a problem is opened the numbers and the answer change) problems. At the end of the semester, the two worse grades will be dropped to compute your final grade in the homeworks (see page 8 for an exception to this option).

**Exams**

1. Three exams will be given during the semester, two midterms and a final. The three exams are worth 75% of the final grade (the distribution is shown in the table above). No make-up provisions are available. However, you can miss one of the mid-terms or drop the worse grade if you take both mid-terms. In either case, the weight (%) of the missed/dropped mid-term will be distributed equally
between the other mid-term and the final exam (see page 8 for an exception to this option). *If you miss more than one mid-term, you will receive a grade of F in the course.*

2. *Because of the nature of the topics covered in this course, the final exam is comprehensive;* however, the final exam will emphasize material not tested in the mid-terms. If you miss the final exam, you will receive a grade of F on it unless you have a valid medical excuse and have notified the instructor in advance. *The final exam grade cannot be dropped.*

3. All exams will be given online using Connect and must be taken during the time established by the instructor. The topics to be tested in and the date of each exam are specified in the "Course Outline" section of this syllabus. A week before each exam an e-mail will be sent outlining the parameters of the exam such as availability, number of questions, and duration.

Exams may include true/false questions, multiple-choice questions/problems, and short essays/problems.

Your final grade is based on your performance in homeworks and exams and in the criteria outlined in this section. The final letter grade will be assigned according to the following distribution (no exceptions):

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
<th>Percent</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1000 - 950</td>
<td>100 - 95</td>
<td>4.0</td>
</tr>
<tr>
<td>A -</td>
<td>949 - 900</td>
<td>94.9 - 90</td>
<td>3.7</td>
</tr>
<tr>
<td>B +</td>
<td>899 - 870</td>
<td>89.9 - 87</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>869 - 830</td>
<td>86.9 - 83</td>
<td>3.0</td>
</tr>
<tr>
<td>B -</td>
<td>829 - 800</td>
<td>82.9 - 80</td>
<td>2.7</td>
</tr>
<tr>
<td>C +</td>
<td>799 - 770</td>
<td>79.9 - 77</td>
<td>2.3</td>
</tr>
<tr>
<td>C</td>
<td>769 - 730</td>
<td>76.9 - 73</td>
<td>2.0</td>
</tr>
<tr>
<td>C -</td>
<td>729 - 700</td>
<td>72.9 - 70</td>
<td>1.7</td>
</tr>
<tr>
<td>D +</td>
<td>699 - 670</td>
<td>69.9 - 67</td>
<td>1.3</td>
</tr>
<tr>
<td>D</td>
<td>669 - 630</td>
<td>66.9 - 63</td>
<td>1.0</td>
</tr>
<tr>
<td>D -</td>
<td>629 - 600</td>
<td>62.9 - 60</td>
<td>0.7</td>
</tr>
<tr>
<td>F</td>
<td>599 - 0</td>
<td>59.9 - 0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Incomplete.**

A final grade of "I" (Incomplete), as authorized in the University Catalog (pp. 104), will be assigned in the most extreme and compelling documented circumstances. It is your responsibility to bring pertinent information to the instructor. You and the instructor must reach a written agreement on the means by which the remaining course requirements will be satisfied. Failure to complete the assigned work by the agreed deadline will result in the incomplete being changed to a grade of "F".

**Academic Dishonesty and Student Conduct Code**

University policies regarding academic dishonesty and student conduct are incorporated by reference to this syllabus. These policies are available in the University Manual, [http://www.csus.edu/umanual/](http://www.csus.edu/umanual/).

Graded assignments must be completed individually. To answer questions presented in a graded assignment you can consult the textbook, materials available in this course’s page in SacCT, and notes that you have developed while studying. Cheating includes use of any materials not listed above during the completion of a graded assignment, including materials publicly available in the Internet. Cheating also includes looking at another student's answers, allowing another student to look at your own answers, requesting or providing information about a graded assignment before its due date, and having a third party answer on your behalf one or more questions in a graded assignment. Collaboration on assignments...
that must be completed individually for a grade is also considered cheating. The minimum penalty for cheating is a grade of "F" in the course. In addition, the student's actions will be reported to the appropriate University authorities.

**Attendance and Drops**

A student who does not attend the initial face-to-face class meeting will not be dropped from the course. It is the student's responsibility to take the proper steps to withdraw from this course.

**Face-to-Face Class Meeting**

During the semester, we will have only one face-to-face class session, the orientation session in DLN 1004 on January 29 from 6:00 to 8:00 p.m.; during face-to-face class meeting all electronic devices (e.g., cell phones, iPods, etc.) must be turned off. Laptops, notebooks, and iPads can only be used to take notes, and access Connect and SacCT. Using electronic devices and/or your notebook for other activities is distracting to other students in face-to-face meetings. You can take notes in writing only. Use of a tape recorder may be authorized under special circumstances. Use of a video recorder is not authorized.

**Communication**

In this course, almost all communication will take place online and, for this purpose, we will use the tools provided by SacCT. For detailed information about policies and procedures regarding communication through SacCT, see Appendix A.

With the exception of the scheduled office hours (see page 1) instructor-student communications will take place through the use of discussion forums, e-mail messages, and document exchange.

**Study Groups**

Study Groups give students the opportunity to work collaboratively and help each other learn the material, particularly problem solving. Thus, at the beginning of the semester I will form Study Groups of three/four members. Initially, students will be allocated to groups at random using SacCT’s Group Manager. However, I encourage you to form your own groups during the first two weeks of the semester. I will send an e-mail with more detailed information about this matter during the first week of the semester.

Each Study Group will have access to its own chat and discussion forums. Only the group members and the instructor can access these rooms.

One of the advantages of working in groups is that not only those who ask questions learn also those who answer the questions learn. I suggest each of you attempts to solve the practice assignments individually before getting together with your Study Group (this could be done in the Study Group’s Chat Room or in the Study Group’s Discussion Board). If you have questions about one or more questions/problems

- discuss them with the members of your Study Group;
- if the group cannot answer the question(s), a designated group member should post the questions in the appropriate discussion board.

Remember graded assignments must be completed individually and not by groups of students.
## Course Outline

<table>
<thead>
<tr>
<th>Dates</th>
<th>Topics</th>
<th>Assignment $^5$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>January</strong>&lt;br&gt;29, 31</td>
<td>Orientation: Content; Procedures; Tools: SacCT, Connect, MegaStat.</td>
<td>Syllabus; Ch. 1</td>
</tr>
<tr>
<td><strong>Feb. 5, 7</strong></td>
<td>Frequency Tables and Distributions Distributions and Graphic Presentations</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>12, 14</td>
<td>Numerical Descriptive Measures</td>
<td>Ch. 3</td>
</tr>
<tr>
<td>19, 21</td>
<td>Displaying and Exploring Data</td>
<td>Ch. 4</td>
</tr>
<tr>
<td>26, 28</td>
<td>Basic Probability Concepts</td>
<td>Ch. 5 (5.1 – 5.6)</td>
</tr>
<tr>
<td><strong>March 5</strong></td>
<td><strong>Mid-term #1 (Online - Chs. 1-5)</strong></td>
<td></td>
</tr>
<tr>
<td>7, 12</td>
<td>Discrete Probability Distributions</td>
<td>Ch. 6 (6.1 – 6.4)</td>
</tr>
<tr>
<td>14, 19</td>
<td>Continuous Probability Distributions</td>
<td>Ch. 7 (7.1 – 7.4)</td>
</tr>
<tr>
<td>21, <strong>April 2</strong></td>
<td>Sampling Methods</td>
<td>Ch. 8</td>
</tr>
<tr>
<td>4, 9</td>
<td>Estimation and Confidence Intervals</td>
<td>Ch. 9</td>
</tr>
<tr>
<td>11, 16, 18</td>
<td>Hypothesis Testing</td>
<td>Chs. 10, 11</td>
</tr>
<tr>
<td><strong>23</strong></td>
<td><strong>Mid-term #2 (Online – Chs. 6 -10)</strong></td>
<td></td>
</tr>
<tr>
<td>25, 30</td>
<td>Analysis of Variance</td>
<td>Ch. 12</td>
</tr>
<tr>
<td><strong>May 2, 7</strong></td>
<td>Correlation and Linear Regression</td>
<td>Ch. 13</td>
</tr>
<tr>
<td>9 - 14</td>
<td>Multiple Regression</td>
<td>Ch. 14</td>
</tr>
<tr>
<td>14, 16</td>
<td>Time Series and Forecasting</td>
<td>Ch. 16</td>
</tr>
<tr>
<td><strong>22</strong></td>
<td><strong>Final Exam (Online - Comprehensive)</strong></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** This course outline provides a general plan for the course. Deviations may be necessary. Any change will be announced through SacCT. It is the students' responsibility to know these changes and follow the updated outline.

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$^5$ For each chapter the reading assignment includes the chapter’s summary and key terms. When the reading assignment does not cover all the sections in the chapter, the sections you must study are listed in parentheses.
Appendix A: Communication using SacCT

Students can communicate with the instructor and their classmates in this course in several ways using SacCT:

Announcements

This is a forum where only the instructor can post. The instructor will use it to post information about changes to the class schedule and other matters related to the course as the need arises.

Chat room(s)

The chat room allow ‘synchronous’ communication among members of the class, with or without the presence of the instructor. There is one chat room for each Study Group.

Discussion Forums

The discussion forums (also known as conference area or electronic bulletin board) allow ‘asynchronous’ communication. This is the primary method of communication with your instructor and classmates. Questions/answers should be posted to the appropriate discussion forums. There are two discussion forum sub-folders.

1. Administrative Stuff: This folder is for questions/answers about the procedures and requirements set by the instructor for this course (Course Administration) and questions/answers about usage of SacCT and Connect (Connect & SacCT Usage). The latter is used for graded assignments: exams and homeworks.
2. Course Content. This forum is organized by topics/chapters. They are for questions/answers about material covered in the chapters 1 through 14 and 16 (stuff that you should know and most likely will appear in homeworks and exams!)

Messages and answers posted to a discussion forum are available to all members of the class and the instructor. You cannot post:

1. personal information in the discussion forums; and
2. answers to questions that appear in a homework or an exam before the due date! The first violation of this policy will be penalized with a grade of “F” in the homework or exam; these grades cannot be dropped! The second time the penalty is a grade of “F” in the course.

Students are responsible for checking the discussion forums at least three times every week. I make every attempt to respond to postings in the discussion forums within 8 to 12 ‘business’ hours of receiving it.

Using the discussion forums has some advantages over e-mailing the instructor:

1. I give priority to messages posted in the discussion board.
2. It ensures that all students have access to the same information. If you have a question, it is likely that someone else in the class can give you the answer before the instructor even sees the question.
3. It gives you a chance to test if you really understand what you are studying by attempting to respond to someone else’s query.

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6 Do not include personal information in the messages you post in the discussion board(s)
In distance education, you are responsible for your own learning and understanding. If some of the course material is unclear, I have no way of knowing unless you ask. It is also likely that if you are confused about something, other students are too. Any questions that you have about the course material should be posted in the appropriate online discussion board. Any questions you have about administrative details (procedures and requirements due dates) should be posted in the ‘Course Administration’ section of the online discussion board. *If you do not understand the material, it is your responsibility to ask!*

**Groups Folder**

In this folder, there is one forum for each Study Group. Messages and answers posted to a particular Study Group forum are available only to the members of the study group and the instructor. Do not include personal information in the messages you post in these forums.

**E-mail messages**

SacCT provides electronic mail that is separate from the email you may have with an ISP or the university (Saclink). This can be used to communicate with other members of the class or the instructor. This is the primary method of communication with your instructor regarding personal matters. *Make sure that the subject line provides a clear idea about the contents of the message and do not use ’text message’ shorthand.* I make every attempt to respond to email within 12 to 24 ‘business’ hours of receiving it.

Questions about general course content or administrative details that are e-mailed to me may be posted in the appropriate discussion forum on SacCT, after deleting identifying information.

Remember that the instructor has access to all discussion boards and chat room discussions, but not private e-mail between you and another student. Your instructor has an infinitely tough skin, but you might not intend to send a message complaining about the instructor if you knew that the instructor would be likely to read it.

**Netiquette**

In our ‘online classroom’, you should adopt the same standard of behavior that you would in an ‘in person’ classroom. *Be polite. Treat others as you would like to be treated.* In order to provide an environment where everybody is able to learn, *it is imperative that you remain respectful of other people.* It is okay to disagree - but discriminatory comments or personal attacks are not acceptable. Please remember that challenging another person’s opinion or line of reasoning (including the instructor’s) is what university life is all about. Attacking an individual is not what university is about.

Please be conscientious about your online contributions.

- Read other students’ postings before you post to avoid asking questions that have already been answered.
- Take care to post your questions and comments in the appropriate place (the instructor will move misplaced comments to help with clarity on the discussion board).
- Be direct and concise in your postings.
- Edit your messages before you post.
- Do not use ‘text message’ shorthand.
- Remember that humor and sarcasm are hard to discern online, so say what you actually mean to say.