University of La Verne

Bachelor of Science in Organizational Management (BSOM)

MGMT388: Statistics
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There are three kinds of lies: lies, damned lies, and statistics. -Mark Twain (quoting former British Prime Minister Benjamin Disraeli)
Course Description

This course will introduce students to the basics and applications of various analysis methods for management and administration. The major topics covered include descriptive statistics, probability, normal distribution, hypothesis testing, measures of association, and regression. Analysis methods are widely used by management analysts to test theoretical ideas, support arguments, solve policy problems, and make managerial and administrative decisions. The course requires some basic calculations (addition, subtraction, multiplication, division, and square root functions), but it focuses on the concepts of statistics rather than the complex technical calculations and complex formulas of statistics.

Course Learning Objectives

Students are expected to calculate a variety of statistics, interpret the outcome of those calculations, and apply them to various management issues. More specifically, students are expected to:

1. Understand a few basic statistics concepts such as independent and dependent variables, cases, hypothesis, levels of measurement, and Central Limit Theorem;

2. Construct and interpret graphical summaries of data;
3. Construct and interpret numerical summaries of data including frequencies, central tendency measures, and dispersion measures;

4. Understand the normal distribution and use probabilities under the normal curve;

5. Understand statistical inference and perform population approximation tests and difference of means tests;

6. Perform cross-tabulation analysis with two variables;

7. Perform regression analysis with two variables;

8. Identify an appropriate statistical method for a given management challenge;

9. Identify, analyze, and apply data to solve management challenges;

10. Perform difference of means tests, cross-tabulation analysis, and regression analysis using computer software program such as Excel.

These learning objectives will be assessed with two exams, one assignment, and weekly discussion board activities. The learning objective numbers 8 and 9 are related to BSOM program goals. Therefore, more information about these two learning objectives is provided at the end of this syllabus.

It is important that every student make a serious attempt to work through all required readings prior to each class and to check with the professor or classmates about any questions that may arise from the readings or class presentations.
Text Books


Recommended: Park, Keeok. 2013. *Making Sense of Statistics: Practice Questions*. ISBN: 9781481179898. This recommended book is for those who want to practice with more questions. It has 10 practice questions for each chapter. All the practice questions deal with business management issues. Odd numbered questions come with answers. It also has sample exam questions with answers. This recommended book is available only from [https://www.createspace.com/4085350](https://www.createspace.com/4085350).

Grading and Course Requirements

Grades will be based on online class participation, two examinations, application assignments, and one reflection paper.

Exams are online, take-home tests that include a variety of conceptual and calculation questions. They deal with the substance of statistics that are covered throughout the term. The second exam is cumulative in that it covers the materials that were covered in the mid-term exam as well as new materials that were not covered in the mid-term exam. The first (mid-term) exam is due by the end of Week 6. The second (final) exam is due by the end of Week 10. T
Class participation is important and it includes responding to weekly questions, working with another student to solve exercise questions, control of course readings, frequency of volunteering, and interactions with classmates and the professor. It also includes timely submission of weekly answers on the Discussion Board, timely submission of the Exams, timely submission of the application assignment, other class activities. The single most important component of class participation is responding to weekly questions on the discussion board.

Application assignment is a statistics application project that involves developing and answering an exercise question. It is explained in this syllabus and done on the discussion board.

Reflection paper is a paper that addresses a few points sharing experience about the course.

Each of these components will receive the following weight:

Online Class Participation 20%. Done mostly in the Weekly Questions forum on the discussion board.

Mid-term Exam 25%. Take the mid-term exam in the Exams section by the end of Week 6.

Application Assignment 20%. It is an application project that involves developing and answering an exercise question and is due on the discussion board by the end of the Week 6.

Final Exam 25%. Take the final exam in the Exams section by the end of Week 10.

Reflection Paper 10%. Due in the reflection paper section by the end of Week 10.
Optional Application Project for Extra Credit. If desired, you may consider doing one of the three optional application projects for extra credit. It is due by the end of Week 10 and is explained on the discussion board.

Overall Grading Policy (from ULV Catalog)

A 94-100%

A- 90-93

Clearly stands out as excellent performance. Has usually sharp insight into material; initiates thoughtful questions. Sees many sides of an issue. Articulates well and writes logically and clearly. Integrates previously learned from this and other disciplines; anticipates next steps in progression of ideas. (At least 90% of all calculations and interpretations are correct)

B+ 87-89

B 84-86

B- 80-83

Grasps subject matter at a level considered good to very good. Is an active listener and participants in class discussion. Speaks and writes well. Accomplishes more than the minimum
requirements. Work in and out of class is of high quality though rarely outstanding. (At least 80% of all calculations and interpretations are correct.)

C+ 77-79

C 74-76

C- 70-73

Demonstrates a satisfactory comprehension of the subject matter. Accomplishes the minimum requirements, and communicates orally and in writing at an acceptable level for a college student. Has a general understanding of all basic concepts. (At least 70% of all calculations and interpretations are correct.)

D+ 65-69

D 60-64

Quality and quantity of work in and out of class is below average and barely acceptable.
F <60

Quality and quantity of work in and out of class are unacceptable.

WF

Designates an unofficial withdrawal from a course.

INC

According to the ULV catalog, incompletes are authorized only when it is impossible for the student to complete the course because of illness or other justifiable cause and only with a formal petition from the student to the professor. The petition must be made before the end of the term. Please read the grading policy section of the ULV catalog. INC grades may be issued if the student meets all three of the following conditions. 1) The student faces an emergency (for example, serious illness, death in the family, or job transfer). 2) The student has participated in at least 60% of the class sessions. 3) The student has completed at least 60% of the course requirements (The mid-term exam has been completed).
Academic Honesty Policy

Each student is responsible for performing academic tasks in such a way that honesty is not in question. For more details, please read the Classroom Conduct and Academic Honesty sections in the ULV Catalog. Students can use the textbook and weekly postings and responses when solving the exam questions. The exam questions must be solved individually. The exam questions and answers must not be shared with anyone before, during, and after the exam. Students are not to copy other students’ weekly questions postings and must work on at least one weekly question on his/her own.

Late Submissions

Weekly assignments, application projects, and mid-term exams may be submitted beyond the deadline. All late submissions will receive late submission penalties. Late weekly assignment submissions will lead to a reduction of one half of the maximum possible point. Late mid-term exams and late application projects will receive a full letter grade reduction. The final exam, the reflection paper, and all other assignments cannot be accepted after the end of Week 10.

Online Discussion Forums

All students are required to log on to Blackboard at least once a week and respond to weekly questions on Discussion Board. Weekly instructions and questions are posted on Discussion Board. Students are required to make weekly postings and are encouraged to participate in Discussion Board discussions by posting their answers, reactions, or comments in the following and other forums: Weekly Questions, Questions and Answers, Application Assignment (Application Project), Extra Credit Projects, and Others.
Class Schedule and Readings

(For the purposes of this course, each week begins on Monday and ends on Sunday.)

Please see and follow the weekly instructions on the discussion board)


Week 2. Hypothesis. Park, Ch. 1.

Week 3. Levels of Measurement. Park, Ch. 2.

Week 4. Measures of Central Tendency and Dispersion (Standard Deviation and Variance). Park, Ch. 4. Recommended, Park, Ch. 3.

Week 5. The Normal Distribution. Park Ch. 5.

Week 6. **Mid-term Exam Due in the Exams section by the end of Week 6.**

**Application Assignment due on the discussion board by the end of Week 6.**

Week 7. Difference of Means Test (two samples with means). Park, Ch.8. Recommended: Park, Ch. 7.
Week 8. Crosstabulation Analysis: Column Percentage Analysis. Park, Ch. 10.


Week 10. Final Exam is due in the Exams section by the end of Week 10.

Reflection Paper due in the reflection paper section by the end of Week 10.

Application Assignment (Development of an Exercise Question)

Develop an application exercise and post it along with correct answers. The initial task is to develop an application question that is similar to any of the practice questions in Chapters 1 to 5 (Exercises with solutions and exercises without solutions). The question should be about something that you deal with in your workplace, home, or other places. How the question is related to what you do must be explained in at least few sentences. The question should demonstrate how a specific statistical method is used to tackle issues in the real world. Due on the discussion board by the end of Week 6. If you answer any of the "open" questions (1.10, 2.13, 3.13, 4.11, 5.14, for example) as part of your weekly work, you are allowed to refine/expand it to meet this requirement.

Reflection Paper

Write a four page (not counting a title page) paper reflecting on what you learned from the course, how you learned them, and how you will use what you learned to improve some aspects of your life. More specifically, the paper must include the following items with designated
subtitles. 1. Expectations. Describe the original expectations that you had about the course and explain to what extent they were met. 2. Challenges. Identify one or two challenges that you encountered in the process of learning the course materials and explain how you overcame those challenges. 3. Most Effective Learning Methods. Explain one or two learning methods that you found to be more effective in learning statistics. 4. Most Useful Statistical Methods. Identify one or two specific statistical methods or concepts that you found most useful in handling issues that you deal with in your workplace or other settings. 5. Applications. Explain how the knowledge and lessons learned in this course will be applied to your life, focusing on furthering your professional and/or educational goals. May include other reflective thoughts and concluding remarks. Needs a separate title page with course information.

A statistician is a person who draws a mathematically precise line from an unwarranted assumption to a forgone conclusion. –Anonymous

Important Online Course Management Information

Here are a few important pieces of information about course management.

1. **Definition of Course Week.** For the purposes of this course, each week begins on Monday and ends on Sunday. Please follow the guidelines in the syllabus and in the Weekly Questions forum. It is not a good idea to read the textbook without reading the weekly questions instructions because some chapters are not assigned. Following the weekly questions guidelines will make your life in this course much easier.

2. **Calculator.** We will need a calculator, but you do not need to buy a sophisticated scientific one. You can use any calculator that has addition, subtraction, multiplication, division, and square root functions. Virtually all calculators have these functions, unless they are a toy. You have one for balancing for your checkbooks, don't you? Most computers and other devises have one as well.
3. **Statistics Learning Analogy.** Generally, statistics is cumulative. Therefore, we need to understand basic concepts before we can tackle more sophisticated concepts. So, please read the first few chapters carefully (Specifically, Chapters 1, 2, 4, and 5). The process of learning Stat is like building a pyramid. We can go higher if we have enough founding blocks at the bottom.

4. **Statistics Learning Strategy.** As a learning strategy, please read each chapter before you post things. Then, review the postings by others and the responses from me. After that, you can go back to the textbook and review the chapter again. This way, we can review the concepts many times. If we review the same thing three times, we will retain something. Right? Maybe not 100%, but 99.99?

5. **Optional Sections and Optional Questions.** The textbook has many optional sections. They are really optional. So you do not need to read the optional sections. Of course, you are welcome to ask questions about materials in the optional sections if you would like to challenge yourself and learn as much as possible from the course. The exams will not cover materials from optional sections. The textbook also has many optional questions (exercises without solutions). They may be slightly more difficult than regular questions. You are encouraged to answer optional questions instead of regular questions.

6. **Communications.** Virtually all communications need to be done on the discussion board. Posting necessary information inside discussion board forums (weekly questions forums) is the best way to communicate with me and other classmates. If Blackboard is down or your communication is personal in nature, you are welcome to contact me by phone or by email (kyoung@laverne.edu) outside Blackboard. All email messages sent to me must have a clear heading on the subject line (For example: Questions about the mid-term exam—MGMT388). If you send an email message from Blackboard, a heading is automatically created. Email messages without a clear heading may not be delivered properly and may be junked by the email system. In the email message, you will need to provide your name and the course number, if the course number was not included in the heading. I usually respond to properly sent email messages within 2-3 work days (M-F). Because this is an online course, not texting based correspondent course, sending text messages is generally discouraged. Text messages without proper headings and proper identifiable information will not be responded to. All email messages need to follow proper email etiquette. Those that do not follow proper email etiquette may not receive any response. For proper email etiquette, see [http://sites.laverne.edu/learning-enhancement-center/files/2011/04/EMAIL_ETIQUETTE.pdf](http://sites.laverne.edu/learning-enhancement-center/files/2011/04/EMAIL_ETIQUETTE.pdf)

7. **Use of Reply Function in the Weekly Questions Forums.** Please use the reply button when you respond to weekly questions. The "Thread" function should not be used in Weekly Questions forums, but can be used in all other forums on the discussion board.
8. **Posting Answers to One Exercise Per Week.** In each week's forum (inside Discussion Board), please respond to only ONE weekly question. This means that you are to post an answer to one exercise without solution at the end of the textbook chapter. You must work on all exercises without solutions at the end of each chapter, but you will post your answer to only one exercise without solution (and keep the answers to other exercises without solutions to yourself). By the Monday after the end of each week, the answers to all exercises without solutions will be posted. Because the answer to an exercise without solution is all the same, you can get the correct answer to the other questions Monday after the end of each week.

Advance postings (those that are posted more than two weeks in advance) to weekly questions may be allowed if permission is sought for special circumstances. However, they will not be responded to until we reach the week for which the answers are posted. If you make postings in advance, please make sure to come back to your postings later and see if you need to respond to my feedback, as explained in #9 below. If this is not followed, some class participation points (one point per occurrence) will be deducted.

9. **Responses to Weekly Postings.** In general, I will respond to weekly postings rather quickly if the postings have some serious errors (usually within 2-3 work days, Monday through Friday). If the postings do not have any errors or have some minor errors but on the right track, I will respond to them with corrections Monday after the end of the week. This is to encourage you to work on the questions on your own (if we know the correct answers already, we may be tempted not to do the work on our own). Because you respond to only one question (exercise) each week, you still need to find out the correct answers to other exercises without solutions. There are many postings and responses. So it is not easy to find the postings and responses that deal with the other questions that you did not answer. Therefore, I will add question numbers to my responses that has the correct answers.

For example, let's say that you responded to 1.6. You should read my response to your answer and respond to my comments. Then, you can go to my responses to other students' postings that have 1.7, 1.8, 1.9, and 1.10 (separately) in the title and find the correct answers to these questions. This way, you can find the correct answers to all weekly questions without reading everyone's postings. Numbering some of my responses this way will usually be done by Monday after the end of each week. You will need to respond to my feedback if it comes with "good efforts," "good attempts," "good," "incorrect," "No," etc. You do not need to respond to my feedback if it comes with "excellent," "very good," "correct," "yes," etc. Also, you do not need to respond if I responded with correct answers. Not responding to my comment will result in a deduction of 1 point. If the response to my comment is still incorrect, I will respond rather quickly. If the response is correct, I will respond later, by Monday after each week.

10. **No Copying of Others' Weekly Postings.** Postings to weekly questions that are copies of other students' postings will not be accepted and they will not receive any credit. You need to
post your answers to a question that has not been answered yet (This does not apply to the first week when everyone will post answers to the 10 arithmetic questions in Appendix A). If all the questions are answered already by other students, you have three options:

1. Choose one of the "open" questions and answer that question (the following are "open" questions: 1.10, 2.13, 3.13, 4.11, 5.14, 8.13, 10.13, 13.13). Open questions ask you to develop your own question and answer it. This should be your first option if all the exercises without solutions are answered already by other students.

2. Answer an even numbered question from the same chapter in the recommended Practice Questions book. In this case, please make sure to type the question as well as answers because not all students may have access to the recommended Practice Questions book.

3. Modify the question (exercise without solution) and answer it. For example, you may change one variable in the question or change some numbers in the question and answer the modified question. If you choose this option, give a title like: "2.6 Modified". At least 20% of the components of the modified question need to be different from the original question (At least 1 out of 5 components, or at least 2 out of 10 components). If at least 20% of the components of the question and the answer are different, postings will be accepted and no academic honesty issue will be raised, even if the rest of the question and answer components are the same. For example, in 1.6 (see page 23), we may change the hypothesis to: Individuals with a mentor are more successful in their lives than are individuals without a mentor. The independent variable has been changed from the original hypothesis, but the dependent variable remains the same. Thus, we can say that 50% of the components of this question (exercise) have been modified. This definitely meets the 20% rule.

On rare occasions, it is possible that two students post answers to the same question almost at the same time, thinking that that question was not answered by anyone yet. If the posting time is almost identical, the second posting by the second student will be "forgiven." If this occurs more than twice throughout the term, though, some class participation points of the second poster will be deducted.

The whole point of having this separate posting requirement is to make sure that you do your own work and do not copy others’ work. If we do our own work, we will learn much better.
**Advance posting** is allowed. Postings for the current week and the week after the current week will be allowed. Postings for more than 2 weeks in advance are discouraged and will need permission.

In case copied postings are made, no credit will be given and further sanctions including 0 point for the entire class participation may be imposed. A clear violation of the University’s academic honesty policy can lead to expulsion. For more general information about academic honesty policy, please see the academic honesty section in the syllabus and the University of La Verne academic catalog.

11. **Class Participation Grades.** Interim class participation grades will be posted (updated) in the Gradebook (My Grades) after the end of each week (usually by Tuesday after the end of each week). Everyone will begin with 100 points (100%). Missing one week's posting will reduce the participation grade by 5 points (5%). Posting a weekly response late will reduce the class participation grade by 2.5 points. If class participation continues, no adjustments (deductions) may be made. Therefore, the points that you see will be the current points regardless of when they were last modified/posted. During the exam week, completing the exam will be considered to be weekly work.

Toward the end of the term, class participation points may be adjusted based on other class participation items and based on the quality and patterns of weekly postings at the professor’s discretion. In general, one or more of the following may lead to a few additional class participation points if they show a measurable pattern: posting excellent answers with detailed explanations, posting answers to optional questions, posting answers to the most challenging questions (for example, 1.10, 2.13, 3.13, 4.11, 5.14, 8.13, 10.13, 13.13), posting answers early in the week (Monday through Thursday), and posting answers to practice questions from the recommended Practice Questions book (If you post answers to a practice question from the Practice Questions book, please make sure to post the question as well as answers because not everyone has access to the questions. Because answers are given to odd numbered questions, you are to post answers to even numbered questions).

On the other hand, one or more of the following will lead to a deduction of a few class participation points if they show a measurable pattern: posting answers without good explanations, posting answers that are similar to other students’ answers (copying other students’ postings will not receive any credit and will violate the University’s academic honesty policy), not responding to my comments/suggestions/questions, and posting answers usually on the last day of the due date (Sunday).
12. **Tips for Very Weak Students and for Very Strong Students.** This course is an introductory statistics course that will accommodate students with diverse background in terms of their academic preparation (both those who are not well prepared and those who are very well prepared). If you struggle with the materials that we cover in this course, you may consider getting a statistics tutor, including one from the University's Learning Enhancement Center. Also, if the materials are difficult, you can try to post your answer (on the discussion board) to the first exercise without solution in each chapter because that should be the easiest exercise without solution. The first exercise without a solution in each chapter is very similar to the first exercise with a solution. For example, 1.6 is very similar to 1.1 and 2.6 is very similar to 2.1, and so forth. In all Chapters (in the 2014 edition), this also applies to the second and third exercises without solutions. For example, 1.7 is very similar to 1.2 and 2.7 is very similar to 2.2. 1.8 is very similar to 1.3 and 2.8 is very similar to 2.3. Those who can answer one of the first three exercises without solutions in each chapter should be able to pass the course. However, this will not lead to a high grade; getting a high grade will require developing an ability to solve all exercises without solutions in each assigned chapter. On the other hand, if you understand everything and things are very easy, you may do the optional questions and try to help others learn privately or on the discussion board. Please remember that this is an introductory statistics course, not an advanced statistics course. Therefore, advanced statistical concepts/techniques will not be covered in this course.

13. **Blackboard Malfunction and Deadlines.** If the Blackboard system does not function properly (because of the University's computer system problems), deadlines will be extended automatically.

14. **Exams.** You can go to Exams and take the mid-term exam and the final exam. The mid-term exam is due by the end of Week 6 and the final exam is due by the end of Week 10. More information is in the Week 6 and Week 10 instructions and in the Exams section.