

University of La Verne  
Bachelor of Science in Organizational Management (BSOM)

MGMT 388 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)*

*Figures don't lie, but liars will figure. -Anonymous*

## **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. Analytical 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 statistics to various management issues. More specifically, students are expected to:

1. Understand a few basic statistical concepts such as independent and dependent variables, cases, hypothesis development, 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; and
10. Perform difference of means tests, cross-tabulation analysis, and regression analysis occasionally using computer software programs such as Excel and occasionally Statistical Package for the Social Sciences (SPSS).

These learning objectives will be assessed with two exams, two written assignments, 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 each week and to check with the professor or classmates about any questions that may arise from the readings or class activities.

### Text Books

**Required:** Park, Keeok. 2014. *Making Sense of Statistics: A Conceptual Approach*. Revised 2014 edition. ISBN: 9781484120729 (Second printing). Available at the University of La Verne Bookstore, not through Amazon or other booksellers. The ISBN number must match exactly.

The 2012 or 2005 editions (ISBN: 978-0-9843446-2-8 or 0-911707-72-7) should **not** be used (many exercises with solutions are different and some exercises without solutions like 13.8 are different). Please note that previous editions are **not** compatible.

**Required:** Park, Keeok. 2013. *Making Sense of Statistics: Practice Questions*. ISBN: 978-1481179898. This text supplements the questions that appear at the end of each chapter in the main text. All the practice questions deal with business management issues. **Odd numbered questions** come with answers, so they **cannot** be used to satisfy weekly assignments. It also has sample exam questions with answers.

### Grading and Course Requirements

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

Exams are online, take-home tests that include a variety of conceptual and calculation questions. They deal with statistical concepts 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.

Class participation is important and it includes responding to weekly questions, solving exercise questions (possibly with another student), management of course readings, frequency of volunteering, and interactions with classmates and the professor. It also includes timely submission of weekly answers on Blackboard, timely submission of the Exams, timely submission of the application assignment, and other class activities. The single most important component of class participation is responding to weekly questions on Blackboard.

The **Application Assignment** is a statistics application project that involves developing and answering an exercise question. It is explained in this syllabus and completed on Blackboard.

The **Reflection Paper** is a culminating paper where students share a few thoughts about their experience taking the course.

Each of these components will receive the following weight:

- **Online Class Participation:** 20%. Done mostly in the Weekly Questions forum on Blackboard.
- **Mid-term Exam:** 25%. Take the mid-term exam in the Exams section under Week #6 by the end of Week 6.
- **Application Assignment:** 10%. It is an application project that involves developing and answering an exercise question and is also on Blackboard under Week 6 and is due at the end of Week 6.
- **Final Exam:** 35%. Take the final exam under Week 10 by the end of Week 10.
- **Reflection Paper:** 10%. Due in the reflection paper section by the end of Week 10. There is also a link to this assignment in the Week 10 folder.
- **Optional Application Project for Extra Credit.** If desired, students 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 Blackboard under Week 10.

### Overall Grading Policy (from ULV Catalog)

A 94-100%

A- 90-93

Student 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 materials 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 discussions. 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+ 67-69

D 64-66

Quality and quantity of work in and out of class is below average and barely acceptable. (At least 60% of all calculations and interpretations are correct.)

F <64

Quality and quantity of work in and out of class is 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 2017-2018 Catalog* beginning on page 52

(<https://laverne.edu/catalog/files/2017/08/2017-18-Course-Catalog.pdf>).

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 50% of the course requirements (All work through Week #6, including the mid-term exam and Application Paper, have 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 *ULLV Catalog* (pages 64 and 61, respectively). 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, or 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, unless arrangements have been made in advance to work with a **Partner** (for more information, see instructions under “Online Discussion Forums”). Failure to comply with this requirement could result in Failure of the course or even dismissal from the University.

## 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 points. 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 under that week’s folder. Weekly instructions and questions are posted by week on Blackboard. Students are required to make weekly postings and are encouraged to participate in 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**.

Students who request permission by the end of Week #1 may complete the weekly assignments with one other student (**Partner**). Partners will be given the same grade for the weekly questions and collaboration will apply **only** to these weekly exercises.

## Class Schedule and Readings

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

Please read carefully and follow the weekly instructions on Blackboard)

**Week 1: Introduction**

Why do we need to study statistics?

Read: Park, Introduction, and Basic Math Review (Appendix A).

Answer question(s) on Blackboard.

Partnership formation: Each student may select one other student for the purpose of solving weekly questions together. **Partners must be requested via e-mail to the professor by the end of Week #1.**

Self-introduction. Each student should introduce him or herself to the professor and the class on Blackboard.

**Week 2: Hypotheses.**

Read: Park, Ch. 1.

Answer question(s) on Blackboard.

**Week 3: Levels of Measurement.**

Read: Park, Ch. 2.

Answer question(s) on Blackboard.

**Week 4: Measures of Central Tendency and Dispersion (Standard Deviation and Variance).**

Read: Park, Ch. 4. Recommended reading: Park, Ch. 3.

Answer question(s) on Blackboard.

**Week 5: The Normal Distribution.**

Read: Park Ch. 5.

Answer question(s) on Blackboard.

**Week 6: Assessment**

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

Application Assignment is due on the Discussion Board by the end of Week 6.

**Week 7: Difference of Means Test (two samples with means).**

Read: Park, Ch.8. Recommended reading: Park, Ch. 7.

Answer question(s) on Blackboard.

**Week 8: Cross-tabulation Analysis:** Column Percentage Analysis.

Read: Park, Ch. 10.

Answer question(s) on Blackboard.

**Week 9: Regression Analysis.**

Read: Park, Ch. 13 (13.6-13.10, Optional Questions).

Answer question(s) on Blackboard.

**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)**

Students should 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). Students should include the question number of the example they are modifying.

The question should be about something that you deal with in your workplace, home, or daily life. How the question is related to what you do must be explained in at least a few sentences.

The question should demonstrate how a specific statistical method is used to tackle issues in the real world.

The assignment is due on Blackboard 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 one of them to meet this requirement.

Assignments will be graded based on the appropriateness of the statistical method to the question or problem being addressed, the sophistication or difficulty of the statistical concept, and the accuracy of the problem's solution.

**Reflection Paper**

Students should write a four-page (not counting a title page) paper reflecting on what you have learned from the course, how you learned the material, and how you expect to 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 may be applied to your life, focusing on furthering your professional and/or educational goals. You may include other reflective thoughts and concluding remarks here. The paper should include 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.** You 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 intended as a toy. Most computers and other devices 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 Statistics is like building a pyramid. We can go higher only if we have enough founding blocks at the bottom.

**4. Statistics Learning Strategy.** As a learning strategy, please read each chapter before you post responses or comments. After this, you should review the postings by other students and the responses from me. Then, 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 several times, we should retain something. Maybe not 100%, but.....

**5. Optional Sections and Optional Questions.** The textbook has many optional sections. They are really optional. 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 the 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 (828-693-1638) or by email ([smacdonald@laverne.edu](mailto:smacdonald@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 should provide your name and the course number, if the course number was not included in the heading.

I try to respond to properly sent email messages within 2-3 days. Because this is an online course, not a 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 who do not follow proper email etiquette may not receive a response.

For proper email etiquette, see: [http://sites.laverne.edu/academic-success-center/files/2011/04/EMAIL\\_ETIQUETTE.pdf](http://sites.laverne.edu/academic-success-center/files/2011/04/EMAIL_ETIQUETTE.pdf) The document is also posted under Announcements on BB.

**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 the Discussion Board), you should respond to only ONE weekly question. (Students who have chosen a **Partner** should answer only ONE question as a pair.)

This means that you should 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 end of the day Tuesday (after the end of each week), I will post the answers to all exercises without solutions. Because there is only one answer to an exercise without solution, you can get the correct answer to the other questions by Tuesday, after the end of each week.

Students may post their answers to these questions without answers in advance of the week in which they are due. However, answers that are posted more than two weeks in advance may be allowed only if permission is sought for special circumstances, but 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).

If the postings do not have any errors, or have some minor errors but are on the right track, I will respond to them with corrections by Tuesday 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) on BB each week, you still need to find out the correct answers to other exercises without solutions in order to prepare for the midterm and final exams. 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 have the correct answers.

For example, let's say that you responded to Question 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 Tuesday 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. Otherwise, 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 Tuesday after each week.

**10. No Copying of Others' Weekly Postings (or answering the same question someone else has answered).** Postings to weekly questions that are copies of other students' postings will not be accepted and they will not receive any credit. **You must post your answers to a question that has not already been answered** (This does not apply to the first week when everyone will post answers to the 10 arithmetic questions in Appendix A).

If all of the questions under "Exercises Without Solutions" at the end of the chapter have been answered already by other students, you have three options:

A. 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.

B. Answer an **even numbered** question from the same chapter in the recommended [Practice Questions](#) book. In this case, please specify that you are answering a question from the 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. Of course, the student may also post the answer to another question that has not already been answered for full credit (if correct).

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 more. And the point of asking students to select a question that has not already been answered is to ensure that students are exposed to as many questions as possible.

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 points 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 (<https://laverne.edu/catalog/files/2017/08/2017-18-Course-Catalog.pdf>)

**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). Missing one week's posting will reduce the participation grade by 10-15 points, depending on the value assigned for that week. Posting a weekly response late will reduce the class participation grade by 1-2 points. Weekly participation is worth 10 or 15 points for a total of 100 points, or 20% of the student's grade. Completing written assignments and exams on time is also important. One or two points will be deducted from the Participation grade (100 points) if any of these assignments are also late.

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, you are to post only answers to **even numbered** questions).

On the other hand, one or more of the following will lead to a deduction of class participation points (or partial 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 backgrounds 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 [Academic Success 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 will be posted at the end of Week #4 and it is due by the end of Week #6; the final exam will be posted by the end of Week #8 and it is due by the end of Week #10. More information about the exams appears in the Week 6 and Week 10 instructions and in the Exams section.