



Lincoln University

FALL 2017

- COURSE:** BA 45 STATISTICS (Monday 3:30—6:15 PM);
3 units (45 hours of lectures)
- INSTRUCTOR:** Igor Himelfarb, Ph.D. ihimelfarb@lincolnuca.edu
510-628-8037
- OFFICE HOURS:** by appointment in Room 404
- TEXT:** Moore, D., McCabe, G., Alwan, L., Craig, B., & Duckworth, W. (2011). *The Practice of statistics for business and economics*. 3rd Ed. W.H. Freeman and Co. ISBN: 978-1-4292-3281-4.
- TOOLS:** Students will be required to use a simple calculator during lectures and a laptop with Excel software is recommended for sections.

CATALOG DESCRIPTION:

This course is designed for business major students and for the non-business students without previous knowledge of statistics. Emphasis is on descriptive statistics and inferential statistics with relevant applications to solving problems, hypothesis testing and decision-making. Important statistical models and distributions will be discussed (3 units). Prerequisite: MATH 10 or MATH 15.

COURSE LEARNING OUTCOMES AND ASSESSMENT:

- Students are expected to develop logic, application, and interpretation of the most commonly univariate statistical techniques used in business and social sciences. The class does not require previous knowledge of any complicated mathematical techniques but requires common sense and practical logic.
 - **Assessment:** Homework, Midterm 1, Midterm 2
- Students are expected to learn the basic concepts and techniques of business statistics and probability. The emphasis of the course will be on the application of the statistical techniques.
 - **Assessment:** Homework, Midterm 1, Midterm2, In-class discussions

- Upon completion of the class, students are expected to be able to construct mathematical models and display a solid foundation in the principles of statistical thinking using case study and example-driven discussions of all basic business statistics topics.
 - **Assessment:** Midterm 1, Midterm 2, Final exam
- My goal is that by the end of the semester students will be able to choose an appropriate statistical analysis for the type of data they plan to analyze, select an appropriate model, conduct and interpret the analysis, and write up the results.
 - **Assessment:** Midterm 1, Midterm 2, Final exam

INSTRUCTIONAL METHODS:

The emphasis will be on learning by solving problems. Every student is welcome to participate in intensive classroom activities. Reading and problem solving assignments will be given throughout the course. Homework will be assigned and solved during sections. During lectures, students will learn principles and concepts covered in the text as well as in various sources on relevant topics. The teaching assistant will conduct the laboratory session. He will help students to review the material as well as work on cases relevant to the topics covered by the homework. There may be class discussions and group presentations by students on the project assignments during class.

CLASS ATTENDANCE:

Students are expected to attend class on a regular basis. Attendance is crucial to performing well in this course, as some of the material presented may not be found in the textbook. Further, the lecture and classroom demonstrations will emphasize and expand upon important topics found in the textbook. Thus, it is vital that you take thorough notes in class.

ASSIGNMENTS:

There will be a weekly homework assignment given out on Tuesday of each week. Students will have a chance to work on the homework during the week and the weekend, ask questions during the laboratory session with the teaching assistant or visit me during my office hours, and turn the assignment the following Monday in class. These assignments will typically consist of some theoretical exercises, conducting analyses on provided data and turning in a results report (write-up) describing the findings, but may include other questions. The purpose of the assignments will be to provide a medium through which you really learn the material. Students are welcome to work with other classmates on the homework, but it is expected that each student turns in his/her own, independently written, homework. Any indication that work was directly shared will not be tolerated and will result in a non-passing grade.

Please bring a **hard copy** of your **typed and stapled** homework assignment that has your name on it to class the day it is due. **Please no e mailed assignments. No late homework will be accepted!**

There will be a number of readings (mostly journal articles) assigned periodically in addition to the reading in the textbook.

In accordance with the university policy on cheating and plagiarism, any student who does not do his/her own write-up completely independently on any assignment will fail the assignment.

EXAMS:

There will be three exams — two midterms and a final. To assess your learning in this course, exam questions will be derived from the lecture and textbook. Topics covered in lecture will be of major emphasis on the exam, and should be the focus of your textbook readings, though there will be some test questions found in the assigned readings but not covered in the lecture. To avoid guessing, there will be no multiple-choice questions on the exams. Exams may include conceptual or theoretical questions, Excel output interpretations or questions that require simple calculations. On the day of the exam, remember to bring a non-graphing calculator (cell phone calculators are unacceptable). **All exams are open books and open notes.**

QUIZZES:

To encourage attendance and to help students with assessment of their knowledge, there will be a set of unannounced quizzes given at the start of class. They will be based on lecture and any assigned reading. They will not be computational in nature, but rather conceptual questions intended to help students gauge how well they understand the material.

GRADING PLAN:

Percentage	Grade
90-100%	A
80-89%	B
70-79%	C
60-69%	D
below 60%	F

Weights	
Homework	20%
Quizzes and class participation	10%
Midterm	30%
Final	40%

CLASSROOM POLICY:

Please do not use personal computers, iPads or smart phones during the lecture. Unless you LaTeX, it is very hard to type up statistical formulas using keyboard. Please use pen and paper to take your notes. If you do need to text message or receive a call, please take it outside the classroom.

I am available and will do my best to help you learn and succeed. Questions and points of discussion are encouraged. I am also highly accessible for discussions if you wish to receive additional information or learn more about a certain topic or need help with data analysis. Please visit me during my office hours, or talk to me immediately after class, if you need study tips or additional help. No appointment is required for my office hours.

TENTATIVE CLASS SCHEDULE:

WEEK	CONTENT
Week 1: Aug. 21	Introduction to Statistics. Variables. Measurement Scales.
Week 2: Aug. 28	Variables (con-ed). Descriptive Statistics.
Week 3: Sept. 4	Descriptive Statistics (con-ed).
Week 4: Sept. 11	Probability. Random Variables.
Week 5: Sept. 18	Correlation. Simple Regression.
Week 6: Sept. 25	Multiple Regression.
Week 7: Oct. 2	Midterm 1
Week 8: Oct. 9	Sample and Sampling.
Week 9: Oct. 16	Principles of Hypotheses Testing. Statistical Significance. Confidence Intervals.
Week 10: Oct. 23	Inferential Statistics: Proportions, One-Sample Techniques.
Week 11: Oct. 30	Inferential Statistics: Two-Sample Techniques.
Week 12: Nov. 6	Inferential Statistics: Two-Sample Techniques (con-ed).
Week 13: Nov. 13	Chi-Square Test.
Week 14: Nov. 20	Midterm 2
Week 15: Nov. 27	Review for Final Exam
Week 16: Dec. 4	Final Exam

Note: Instructor reserves the right to modify the content of this syllabus.

GOOD LUCK!

Syllabus Reviewed: 8/16/2017

Appendix. Program and Institution Learning Outcomes.

Institutional Learning Outcomes (ILOs)	
<i>Graduates of the BA program of Lincoln University should be able to:</i>	
1a	Develop the habits and skills necessary for processing information based on intellectual commitment, and using these skills to guide behavior.
2a	Raise important questions and problems, and formulate them clearly and precisely in oral or written communication
3a	Act with dignity and follow the principles concerning the quality of life of all people, recognizing an obligation to protect fundamental human rights and to respect the diversity of all cultures.
4a	Focus on individual and organizational benefits; communicate to co-workers and company’s leadership in facilitation of collaborative environment; to be honest and transparent with regard to their work, and to be respectful of the work of others.
5a	Display sincerity and integrity in all their actions, which should be based on reason and moral principles; to inspire others by showing mental and spiritual endurance
6a	Show creativity by thinking of new and better goals, ideas, and solutions to problems; to be resourceful problem solvers.
7a	Define and explain the boundaries, divisions, styles and practices of the field, and define and properly use the principal terms in the field

Program Level Outcomes (PLOs)	
<i>Students completing General Education courses in BA program will be able to:</i>	
1	Demonstrate proficiency in college-level mathematics, English, sciences, humanities, and social sciences.
2	Represent mathematical information symbolically, visually, numerically, and verbally. Being able to interpret and apply arithmetical, algebraic, and geometric methods to solve problems.
3	Communicate effectively in multiple creative and academic writing genres by applying Standard American English.
4	Think critically and apply common sense in approaching and solving real-world problems.
5	Demonstrate proficiency in skills that sustain lifelong learning, particularly to think critically and responsibly in assessing, evaluating, and integrating information.
6	Understand the responsibilities of active citizenship, community engagement, and social responsibility.

Institutional Learning Outcomes (ILOs)	
<i>Graduates of the BA program of Lincoln University should be able to:</i>	
1a	Develop the habits and skills necessary for processing information based on intellectual commitment, and using these skills to guide behavior.
2a	Raise important questions and problems, and formulate them clearly and precisely in oral or written communication
3a	Act with dignity and follow the principles concerning the quality of life of all people, recognizing an obligation to protect fundamental human rights and to respect the diversity of all cultures.
4a	Focus on individual and organizational benefits; communicate to co-workers and company's leadership in facilitation of collaborative environment; to be honest and transparent with regard to their work, and to be respectful of the work of others.
5a	Display sincerity and integrity in all their actions, which should be based on reason and moral principles; to inspire others by showing mental and spiritual endurance
6a	Show creativity by thinking of new and better goals, ideas, and solutions to problems; to be resourceful problem solvers.
7a	Define and explain the boundaries, divisions, styles and practices of the field, and define and properly use the principal terms in the field

Program Level Outcomes (PLOs)	
<i>Students completing General Education courses in BS program will be able to:</i>	
1	Demonstrate proficiency in college-level mathematics, English, sciences, humanities, and social sciences.
2	Being able to interpret and apply arithmetical, algebraic, and statistical methods to solve problems
3	Communicate effectively in diagnostic field by applying Standard American English. Be able to use appropriate terminology accepted in DI field.
4	Think critically and apply common sense in approaching and solving DI and real-world problems.
5	Demonstrate proficiency in skills that sustain lifelong learning, particularly to think critically and responsibly. Be able to evaluate and integrate DI information.
6	Understand the responsibilities of active citizenship, community engagement, and social responsibility.
7	Develop basic understanding of bioethics' standards acceptable in the field of diagnostic imaging.