Course Prospectus
For MATH 168 Statistical Analysis

Contents

Overview

This is an introductory course assuming a student has no prior knowledge of statistics but does have some knowledge of high school algebra. The focus of this course is upon basic statistical concepts and methods in a manner emphasizing understanding of the principles of data collection and analysis rather than theory. Students encounter how statistics is commonly used in the real world. The data, and probability and inference are the two major parts of this course.

Consideration of the data includes graphical and numerical summaries to describe the distribution of a variable, or the relationship between two variables, and data production to learn how to design good surveys and experiments, collect data from samples that are representative of the whole population, and avoid common sources of biases. Our study of probability and Inference, using the language of probability and the properties of numerical summaries computed from a random samples, help students learn to draw conclusions about the population of interest, based on random samples, and attach a measure of reliability to them.
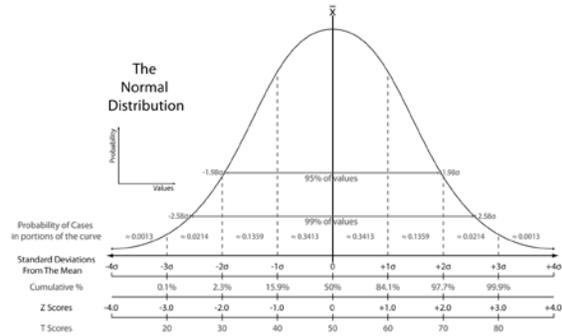
Statistics is the study of the collection, analysis, interpretation, presentation, and organization of data.

Course description

This course deals with basic probability, descriptive and inferential statistics, and decision making. Emphasis is on frequency distributions, probability distributions, random variables, expectation, sampling, estimation and decision making. Upon completion, students should be able to describe data and test inferences about populations using sample data.

Prerequisites and corequisites

Completion of MATH 162 or the equivalent.

Course credit

Three (3) semester credit hours.

Instructional objectives

On successful completion of this course, a student should be able to:

1. Organize, display, calculate, and interpret descriptive statistics;

2. Apply basic rules of probability;

3. Identify and apply appropriate probability distributions;

4. Perform regression analysis;

5. Analyze sample data to draw inferences about a population parameter;

6. Communicate results through a variety of media; and

7. Define key terms.

Your instructor

An instructor has not been named for this course at this time.

7/11/2016.

Students with disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please inform your instructor by email (on the course "Info" page, click on the instructor's name and then select "Send Email").

Technology access

This course requires web access and an established email account. The Adobe Acrobat Reader is necessary to view documents that are PDF files. One can download the reader free at:

 http://www.adobe.com/products/acrobat/readstep2.html.

Course evaluation

Student input is welcome for improving this course. Making suggestions by email is helpful. Our goal in this course is to facilitate the successful achievement of all instructional objectives by all students. At the end of the course students have the opportunity of assessing the course. We want to make e-learning courses as effective as we can. By completing the assessment you can earn 30 points toward your final grade. We may also ask some other questions concerning a student's experience in distance learning to help us improve our program. We appreciate students letting us know how we can improve our products and services for them and other distance learners.

Withdrawing from or dropping this course

It is the responsibility of a student to drop a course if he or she cannot meet the requirements of the course. Any student who stops attending a course without officially withdrawing from it risks receiving a punitive grade for that course.

Withdrawal requests may be conveyed in any manner to the course professor, Registrar, or Dean of Faculty. This action is sufficient for ensuring any refund owed you. Please note the following:

- If a student drops a course on or before the "Last day to withdraw from a course without a grade penalty" as published in the University Academic Calendar, even if his or her work is not of a passing grade, then a "W" is recorded.

- If a course is dropped after that date, but before the last 21 calendar days of the semester, then the instructor determines the grade. The faculty member will at this time record a grade of "W" if passing (not computed in GPA) or "WF" if failing (computed in GPA).

- Students who drop a course, yet remain in one or more other courses during the last 18 calendar days of the semester, will receive a grade of "WF."

- Students who completely withdraw from the University at any time during the semester may be given a grade of "W" on all courses.

If students do not initiate the withdrawal process, the instructor is required to initiate the administrative process and to record a grade of "W" or "WF" for the course depending on the date the faculty member drops the student from the course. Students who register for a course as an audit, but then withdraw will be assigned a grade of "W" for the course.

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Attendance in this online course

One of the most vital aspects of the college and university experience is attendance and punctuality in the learning environment. Regularity of attendance is necessary, whether in an online course or in an on-campus course, for students to derive maximum benefit from a course and to maintain a satisfactory academic record. We have noticed that students who fall behind in their coursework typically drop out. Therefore, we highly encourage you to complete your assignments on time as we want you to succeed. Remember Ecclesiastes 9:10: "Whatever your hand finds to do, do it with your might; for there is no work, nor device, nor knowledge, nor wisdom, in the grave, where you go."

Please be aware that all students who fall behind in an online course and do not complete twenty-five percent (25%) or more of the total assignments and other required activities for a course, on or before "Last day to withdraw from a course" as set forth in the University Academic Calendar, will receive a grade of "W" for it. After that date, the grade will be a "WF" and counted in a student's GPA. Moreover, an instructor may drop a student from a course whenever the instructor concludes that a student's class attendance or punctuality endangers the student's success or places other students at risk.

Icebreaker assignment

To officially begin this course you must complete an icebreaker assignment by which you introduce yourself to your classmates through posting a short autobiography on the course Discussion Forum. A student can earn 30 points by posting the Icebreaker assignment on time. These points could make the difference between an A or a B, or passing or not passing this course.

Textbooks

Students may order their books through the University Bookstore which is located on our main website. Living University is a participant in the Amazon Services LLC Associates Program. Be aware that the books used or referred to in this course are commercial publications. They represent the views and ideas of their authors, editors, and publishers. Living University does not endorse these texts nor vouch for their accuracy. We simply employ them in helping you master the content of the course.

Required Textbook

Statistics: The Art and Science of Learning from Data (3rd Edition) by Alan Agresti and Chris Franklin. Pearson; 3 edition.

Optional Books
None.

Course requirements and grades

Due dates and extensions
Submit assignments on or before the due date. Students must complete the course by the last official day of instruction as set forth in the academic calendar.

Reading assignments
Reading assignments are integrated into the lesson pages at the course website.

Listening assignment

Active listening to works of music may, in the long run, be the most valuable activity you undertake in this course. There is no substitute for having pieces of music "in your ears"; nor is there any replacement for thinking about the pieces you hear. As an encouragement to both listening and considering the study of various forms of music, you are required to complete (on the form provided) six online listening assignments.

Writing assignments

Any writing assignments in this course should follow the MLA style as set forth in *Writing Research Papers: A Complete Guide* by Lester & Lester. Please cite your sources and use quotation marks where needed. The Files feature on an Assignment Submission page lets you submit your work so your instructor can have it handy for download, review, and grading.

Study tips

Distance learning emphasizes self-motivation. The instructor functions as a facilitator with the student as the driving force in mastering course content. Students are encouraged not to put off completing their readings and assignments. While there are many different learning styles, the following strategy should serve the needs of most students.

- Look over assigned readings.

- Read the assigned readings making notes before viewing the assigned lecture.

- Define terms in the assignment. The four exams will specifically test basic terminology. Students should develop their biblical and theology vocabulary as they proceed assignment by assignment.

- As students view lectures, they should complete their notes.

- Complete the answers for the lesson writing assignment.

- Each week students should review notes, geographical terms and locations, and the words they defined.

- If a student has a question, ask. Questions should arise in the teaching-learning process. By bringing questions to our attention, students not only acquire assistance but they also maintain the interaction necessary in higher education. To submit a question just click on the instructor's name on the course "Info" page and send your question by email through the Populi system.

Quizzes and examinations

There are no quizzes in this course.

There are three online exams in this course of no more than 50 objective questions each.   All exams are closed book and closed-notes. **Exam 3 is a proctored exam** to be taken online. A proctored exam is one that is overseen by an impartial individual (called a proctor) who monitors or supervises a student while he or she is taking an exam. The proctor ensures the security and integrity of the exam process for all involved.

Students have several choices for completing these two proctored exams:

1. A student can come to campus for an exam. The instructor will establish a specific campus classroom, date and time for the student to come to LU and complete the exam with the instructor or his or her representative.

2. A student can utilize a Living Church of God church officer (i.e. elder, deacon, deaconess, adult/youth leader, etc.). Be sure to politely ask the individual and if he or she consents to be the proctor for you.

3. A student can use ProctorU online. ProctorU is a service that LU faculty may utilize for proctoring online exams. ProctorU allows students to conveniently and securely complete assigned exams using almost any web cam. With a computer and approved web cam, a student can take online exams at home, at work, or almost anywhere they have Internet access. ProctorU connects students directly to their proctor via web cam so they can both see and talk to one another. ProctorU can also monitor the student's computer while they complete the exam. Students pay ProctorU directly for this service. LU does not reimburse students for proctoring fees. To view a demo video on how this service works, or to sign up and schedule testing appointments, the Living University portal is located at www.proctoru.com/portal/livinguniv .

4. A student can use a college or university testing center. There is usually a fee for this service which students pay directly. LU does not reimburse students for proctoring fees.

5. A student can have an approved proctor. This may be a school official, such as a teacher or registrar, or a librarian who is not related to the student.

All university students should present proper photo identification to their proctor before taking an exam unless the proctor personally knows the student being tested. All exams are online. In order for a proctored exam grade to be recorded, a signed Proctor's Signature Form (PSF) must sent to LU. There is no PSF required for ProctorU. Otherwise, provide the approved proctor with a copy of the Proctor's Signature Form (PSF) and a stamped envelope with appropriate postage paid, properly addressed to:

> Michelle R. Broussard
> Living University
> 2301 Crown Centre Drive, Suite A
> Charlotte, NC 28227-7705

Terms and phrases

Each assignment includes a set of terms and phrases for you to learn. This exercise is to help you develop and expand your vocabulary as you proceed through the five lessons and to help you focus on the context of the content you are reading. Examinations will specifically test your mastery of the basic terminology of this course. Many students find looking over vocabulary words just as they go to bed at night and as they arise in the morning helps commit them to memory. Be sure to review your definitions before an examination.

Grading

A course grade will be determined based on the number of points a student has earned over the semester as follows:

Icebreaker Assignment (30 points)
Exams (three, each worth 100 points, for a total of 300 points; all four exams are <u>closed book</u> and <u>closed-notes</u> online. Only Exams 3 is a <u>proctored exam</u>.
Homework Problems (five, each worth 30 points for a total of 150 points)
"What I Learned" Essay (40 points)
Course Evaluation (30 points)
TOTAL 550 points

Grades are in the traditional American style of an A, B, C, D, or F. In distance learning, we believe that the measure of mastery of course subject matter is completion of 80% of the objectives for a course. That means that we want students to earn at least 800 points in this course. If they do not do so then they have not achieved the level of the mastery we would like them to have.

We want this course to be competency-based and so it is possible for the entire class to receive an A or a B. There is no artificial curving of scores in the assignment of grades (if you do not know what that means, do not worry about it). Mastery of the material is what one's goal should be.

Grades, assigned by points, are as follows:

A 495-550 points

B 440-494 points

C 385-439 points

D 330-384 points

F Below 330 points

Academic irregularity

Students have the responsibility for conducting themselves in such a manner as to avoid any suspicion that they are improperly giving or receiving aid on any assignment or examination. An academic irregularity not only includes cheating but also includes plagiarism (taking another's ideas and/or words and presenting them as if they were the writer's own) and the submitting of the same paper in separate courses without prior consent from the faculty members concerned.

What is Plagiarism?
Plagiarism in academia is the act of stating or implying that another person's work is your own. You commit plagiarism if you:

1. Submit a paper to be graded or reviewed that you have not written on your own.
2. Copy answers or text from another classmate and submit it as your own.
3. Quote or paraphrase from another paper without crediting the original author.
4. Cite data without crediting the original source.
5. Propose another author's idea as if it were your own.
6. Fabricate references or use incorrect references.
7. Submit someone else's presentation, program, spreadsheet, or other file with only minor alterations.

In cases of suspected academic irregularity, faculty members may refuse to grade such papers, completely or in part, or examinations, and to record each of them as a failure. If an academic irregularity is sufficiently serious, the University may take one or more of, but not limited to, the following actions:

1. Drop the student from the course with a grade of F;

2. Place the student on academic probation; and/or

3. Dismiss the student from the University.

Course outline

Lesson 1 Gathering and Exploring Data (August 15-September 4)

 Topic 1 Statistics: The Art and Science of Learning from Data

 Topic 2 Exploring Data with Graphs and Numerical Summaries

 Topic 3 Association: Contingency, Correlation, and Regressio

 Topic 4 Gathering Data

Lesson 2 Probability AND Probability Distributions (September 5-25)

 Topic 1 Probability in our Daily Lives

 Topic 2 Probability Distributions

 Topic 3 Sampling Distributions

Lesson 3 Inference Statistics (September 26-October 30)

 Topic 1 Statistical Inference: Confidence Intervals

 Topic 2 Statistical Inference: Significance Tests about Hypotheses

 Topic 3 Comparing Two Groups

Lesson 4 Analyzing Associations and Extended Statistical Methods (October 31-November 20)

 Topic 1 Contracts and Sales: Introduction and Formation

 Topic 2 Contracts: Performance, Remedies, and Rights

 Topic 3 Sales: Product Advertising and Liability

 Topic 4 Products: Business Intellectual Property

Lesson 5 Analyzing Associations and Extended Statistical Methods (November 21-December 18)

 Topic 1 Analyzing the Association Between Categorical Variables

 Topic 2 Quantitative Variables and Regression Analysis

 Topic 3 Analysis of Variance Methods and

 Topic 4 Nonparametric Statistics

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