Course: HOA 730
Class meeting time: Mondays 2:30 PM – 5:15 PM
Classroom: HOS 234
Instructor: Dr. A. K. Singh

Office: HOS 266
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Email: ashok.singh@unlv.edu
However, Canvas is a more reliable way to contact me via email as I check WebCampus email twice a day and answer any questions (technical or other) each day.

Office Hours: Tue, Th 9:30 - 11:00 AM. Also by appointment or on Zoom

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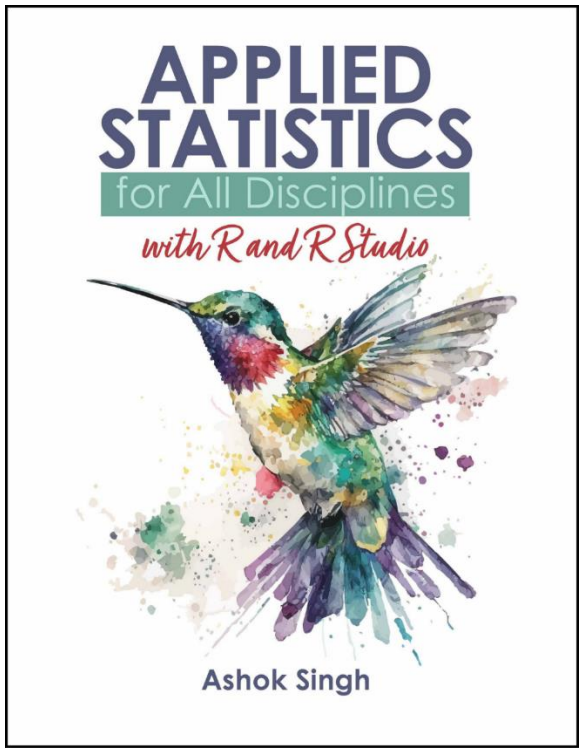

Print: $110

Ebook: $55

COURSE DESCRIPTION

This course is designed to introduce the student to basic concepts and techniques of statistical analysis. It will cover concepts and techniques related to describing and exploring the data and hypothesis testing such as t-tests, chi-square, ANOVA, regression analysis, and non-parametric tests as well as the assumptions underlying these techniques. The course stresses the development of statistical thinking, the assessment of credibility and value of the inferences made from the data, both by those who consume and those who produce them.

Course Overview and Learning Outcomes

After completing this course, a student will:

(1) Be able to explain concepts such as – (a) populations and samples, (b) normal distribution is a useful but approximate model, (c) statistical inference depends on how samples are collected, (d) correlation between two variables does not imply cause and effect1, (e) choice of statistical tool depends on the type of variable you are dealing with, and your questions.

(2) learn necessary statistical tools and techniques to use in your thesis or professional paper and to interpret the results of the techniques employed. Keep in mind that these tools and techniques will also enable you to make more sound decisions in solving business problems because they will help you understand the results of the statistical techniques employed by others.

(3) Be able to use R, a free and advanced statistical software environment, for statistical data analysis and visualization.

In my lectures, I will:

- Emphasize the elements of statistical thinking
- Incorporate more data and concepts, fewer recipes and derivations. Wherever possible, automate computations and graphics.
- **I will not ask you to do statistical data analysis by calculators.**

Statistics is the science of collecting, organizing, and interpreting data or learning from data. Through lab activities and R assignments, you will develop the skills needed to use statistical analysis on actual data and interpret the results.

Upon completion of this course, the successful students will be able to:

1. Develop a working knowledge of statistical terms and concepts
2. Gain an understanding of various statistical techniques
3. Know the differences between descriptive and inferential statistics
4. Select appropriate statistical procedures to analyze data and test hypotheses
5. Gain an understanding of the assumptions of various statistical procedures and the importance of summarizing the data before jumping in with hypothesis testing
6. Develop skills to use RStudio software environment as a tool to analyze data
7. Sharpen quantitative and analytic thinking skills
8. Interpret and provide a written description of the results of statistical procedures used, as well as to evaluate the reported results of statistical studies.

TOPICS COVERED:

1) Data summarization via (a) statistical measures - mean, variance, median, quartiles. and (b) graphical methods - box plot, histogram, pie chart, bar chart.
2) Elements of set theory and probability, random variables and their probability distributions : binomial and normal distributions.
3) Statistical inference: (a) confidence intervals for one normal mean, difference of two normal means, binomial proportion, difference of two binomial proportions, and
(b) testing hypotheses for one normal mean, difference of two normal means, binomial proportion, difference of two binomial proportions.
4) Analysis of Variance (ANOVA).
5) Multiple Linear Regression, Regression Diagnostics, Problem of Multicollinearity.
6) Chi-square tests for goodness of fit, independence, and homogeneity of proportions. These objectives will be accomplished by reading the assigned material, doing home assignments, discussing the course materials in class, doing problems in class, and attendance and participation in lectures and classroom/lab activities.

TEACHING PHILOSOPHY

It is my responsibility to create a classroom environment that facilitates learning and allows the desired outcomes of this course to occur. As such, I try to promote a relaxed atmosphere in the classroom. It is your responsibility, as a student, to study the readings and exercises, complete assignments, and participate in discussion and activities – do not be shy about asking questions in or out of the classroom. Success in any class you take is highly correlated with your desire to learn and keeping current with the class..

CLASS PROCEDURES AND POLICIES

The class will be a combination of lectures, discussion, and lab activities. You are expected to arrive at each session in time, having prepared for the class and bringing all relevant material with you.

RECOMMENDED READING MATERIAL PLUS OTHER RESOURCES

1) McClave, J. T., Benson, P. G., and Sincich, T. Statistics for Business and Economics (10th Ed.). Upper Saddle River, NJ: Prentice Hall.

2) FREE STATISTICS E-BOOKS FOR DOWNLOAD

http://www.r-statistics.com/2009/10/free-statistics-e-books-for-download/

2) www.stats24x7.com (for help with statistics topics)

HOA 730 Fall 2026 Class Schedule

Week	Dates	Topics
1	January 20 - 23	Download R, Use R for data summarization - visualizations
2	January 26 - 30	Beginning of Casino Games, Elementary Probability, Probability Distributions
3	February 2 - 6	Elementary Probability, Probability Distributions
4	February 9 - 13	Sampling Distributions
5	February 16* - 20	Confidence Intervals
6	February 23 - 27	Testing Hypotheses
7	March 2 - 6	Testing Hypotheses, **MIDTERM**
8	March 9 - 13	ANOVA
9	March 16 - 20	**Spring Break**
10	March 23 - 27	Correlation and Simple Linear Regression
11	March 30 -April 3	Multiple Linear Regression (MLR)
12	April 6 - 10	Multicollinearity, Variance Inflation Factor
13	April 13 - 17	MLR Diagnostics
14	April 20 - 24	MLR Examples, Chi-square Tests
15	April 27 - May 1	Study Week
16	May 4 - 8	**Final Project & Final Multiple Choice Quiz**

* February 16, 2026: President's Day Recess

***R and RStudio: F**ree software environment for statistical computing and graphics supported by the R Foundation for Statistical Computing. The R language is widely used among statisticians and data miners for statistical analyses.

*R is a free software environment for statistical computing and visualization. RStudio provides a windows environment for using R. To use RStudio, you need first to install R and then RStudio.

*To Download R and RStudio
https://rstudio-education.github.io/hopr/starting.html

Learning R will give you a competitive edge as R is used in almost all sectors.
https://data-flair.training/blogs/r-applications/

ASSESSMENT

Class Preparation and Participation	10%
Homework and In-class Assignments	30%
Mid-Term Exam	20%
Final Exam (2 parts)	40%

Home/In-class Assignments (30%) – **must be turned in on time in through GRADESCOPE as a pdf file, named as LASTNAME_HW_x.pdf.**

These assignments will help you apply the concepts covered in each chapter and sharpen your statistical skills. They test for the conceptual understanding of the techniques, including their applications and interpretations. Assignment detail is provided on subsequent pages of this syllabus.

Exams (total 60%)

The mid-term and final exam will consist of actual data analysis, interpretation of R outputs, and/or evaluation of statistics published in selected hospitality/tourism/leisure journal articles. Mid – term = 20%,
Final Exam will have 2 parts: Part 1 = Take Home Project (30%)

Part 2 = (multiple choice) final (10%), online in WebCampus

Participation (10%)

Active student participation is a vital component of this course. Your success in this course will depend upon how well you prepare for the class (i.e., completion of reading and written assignments). It is difficult to participate, if you do not attend class.

GRADING RUBRICS - HOA 730

10-Point Response

The response shows (i) complete understanding of the problem, (ii) correct formulation of the problem in statistical terms, (iii) selection of correct statistical methods, (iv) correct execution of selected statistical methods, and verification of assumptions required for these methods, and (v) correct and complete interpretation. There may be 1 minor error in a 10-point response

8-9 Point Response

(i) almost complete understanding of the problem, (ii) formulation of the problem in statistical terms that is mostly correct, (iii) selection of correct statistical methods, (iv) correct execution of selected statistical methods, but no verification of assumptions required for these methods, and (v) reasonable interpretation. The response may have up to 2 minor errors.

6-7 Point Response

(i) some understanding of the problem, (ii) formulation of the problem in statistical terms may have some errors, (iii) selection of correct statistical methods, (iv) correct execution of selected statistical methods, and verification of assumptions required for these methods, and (v) no interpretation. The response may have up to 4 minor errors.

0-5 Point Response

No statistical formulation is given, just an output from a software package is included. There may be no explanation of the solution, or the reader may not be able to understand the explanation. The student is unable to explain why and how decisions were made.

Grading –

Group Projects = 10%, Home assignments = 20%, Midterm Project = 30%, Final Project = 40%

(Class participation grades are functions of attendance and discussions; all other items are graded using the following grading rubrics).

A = 93-100%
A-= 90-92%
B+ =87-89%
B =83-86%
B-=80-82%
C+ =77-79%
C=73-76%
C-=70-72%
D+ =67-69%
D =63-67%
D-=60-62%
F =Below 60%

1. Other Important Information

Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution.

• Cheating in any manner will not be tolerated. Any student involved in academic dishonesty will receive a zero for the assignment or test for the first instance. Any further instances of academic dishonesty will result in a failing grade for the course.

• Cheating includes copying assignments, exams, and quizzes, asking another student to sign for attendance, and group work on individual
projects. The student who allows his/her work to be copied or does work for another student will be subject to the same penalty.

• Another example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources.
• See the Student Academic Misconduct Policy (approved December 9, 2005) located at: http://studentconduct.unlv.edu/misconduct/policy.html.

2) Copyright:

The University requires all members of the University Community to familiarize themselves and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject you
to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: http://provost.unlv.edu/copyright/statements.html.

3) Disability Resource Center (DRC):

The Disability Resource Center (DRC) determines accommodations that are "reasonable" in promoting the equal access of a student reporting a disability to the general UNLV learning experience. In so doing, the DRC also balances instructor and departmental interests in maintaining curricular standards so as to best achieve a fair evaluation standard amongst students being assisted. In order for the DRC to be effective it must be considered in the dialog between the faculty and the student who is requesting accommodations. For this reason faculty should only provide students course adjustment after having received an "Academic Accommodation Plan." If faculty members have any questions regarding the DRC, they should call a DRC counselor. UNLV complies with the provisions set forth in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. The DRC is located in the Student Services Complex (SSC-A), Room 163, phone (702) 895-0866, fax (702) 895-0651. For additional information, please visit: http://drc.unlv.edu/.

4) Religious Holidays Policy:

Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor no later than the end of the first two weeks of classes, September 7, 2012, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. This policy shall not apply in the event that administering the test or examination at an alternate time would impose an undue hardship on the

instructor or the university which could have been avoided. For additional information, please visit: http://catalog.unlv.edu/content.php?catoid=4&navoid=164.

5) Tutoring:

The Academic Success Center (ASC) provides tutoring and academic assistance for all UNLV students taking UNLV courses. Students are encouraged to stop by the ASC to learn more about subjects offered, tutoring times and other academic resources. The ASC is located across from the Student Services Complex, #22 on the current UNLV map. Students may learn more about tutoring services by calling (702) 895-3177 or visiting the tutoring web site at: http://academicsuccess.unlv.edu/tutoring/.

6) UNLV Writing Center:

One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301.
Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at:http://writingcenter.unlv.edu/

7) Rebelmail

By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students' e-mail prefixes are listed on class rosters. The suffix is always @unlv.nevada.edu

For **UNLV Policies for all Students, please visit:**

unlv.edu/policies/students