



HOA 730

Statistical Analysis for Hospitality

Spring 2026

Instructor: Mana Azizsoltani, PhD
Email: mana.azizsoltani@unlv.edu
Class meeting: Mondays, 2:30–5:15 p.m.
Classroom: HOS 234
Semester dates: January 20–May 9, 2026
Office hours: By scheduled appointment or Zoom/Webex
Course credits: 3 credits

Please use WebCampus (Canvas) for course announcements, materials, submissions, and routine course communication.

UNLV Syllabus Outline

Subject code	HOA 730
Subject title	Statistical Analysis for Hospitality
Instructional format	In-person lecture, discussion, and computer-based lab activities
Meeting time	Mondays, 2:30–5:15 p.m.
Location	HOS 234
Instructor	Mana Azizsoltani, PhD
Email	mana.azizsoltani@unlv.edu
Office hours	By scheduled appointment or Zoom/Webex

Course Description

This course introduces the concepts and techniques of statistical analysis used in hospitality, tourism, and leisure research. Students learn to describe and explore data and to conduct and interpret statistical inference, including confidence intervals, hypothesis tests, analysis of variance, chi-square tests, correlation, and regression analysis. Throughout the course, emphasis is placed on statistical thinking, the assumptions underlying each method, and the credibility and practical value of conclusions drawn from data.

The course treats statistics as the science of learning from data. Through discussion, hands-on laboratory work, homework, and applied projects, students will develop the ability to analyze real data in R and communicate findings clearly to academic and professional audiences.

Course Objectives and Learning Outcomes

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

1. Explain foundational concepts in probability, sampling, descriptive statistics, and statistical inference, and select useful numerical and graphical summaries for a dataset.
2. Translate hospitality and leisure research questions into testable statistical questions and select methods that fit the study design and variables involved.
3. Construct and interpret confidence intervals and conduct hypothesis tests for means and proportions.
4. Conduct and interpret analysis of variance, chi-square tests, correlation, simple linear regression, and multiple linear regression.
5. Use R and RStudio to manage, summarize, visualize, and analyze data reproducibly while evaluating assumptions and diagnosing common statistical problems.
6. Interpret statistical evidence critically and communicate results accurately without overstating causal or practical conclusions.

Course Content

Major areas of study include:

- data types, data quality, and research questions
- numerical summaries and data visualization
- elementary probability, random variables, and binomial and normal distributions
- sampling distributions and the logic of statistical inference
- confidence intervals and hypothesis tests for means and proportions
- analysis of variance (ANOVA)
- correlation and simple linear regression
- multiple linear regression, diagnostics, and multicollinearity
- chi-square tests for goodness of fit, independence, and homogeneity

Learning Resources and Technology

Recommended Resources

- Singh, A. (2026). *Applied Statistics for All Disciplines with R and RStudio* (1st ed.).
- James, G., Witten, D., Hastie, T., & Tibshirani, R. (2021). *An Introduction to Statistical Learning: With Applications in R* (2nd ed.). Springer. The R edition is available at <https://www.statlearning.com>.
- McClave, J. T., Benson, P. G., & Sincich, T. *Statistics for Business and Economics* (10th ed.). Prentice Hall.
- Course readings, hospitality research articles, datasets, examples, and instructional materials posted in WebCampus (Canvas).

R and RStudio

R is a free environment for statistical computing and graphics, and RStudio is an interface for working with R. Students must have reliable access to a computer capable of running both applications. Installation guidance is available at <https://rstudio-education.github.io/hopr/starting.html>. Students should install the software early and bring a suitable computer to class when requested.

This course emphasizes interpretation and reproducible analysis. A calculator is not a substitute for completing required work in R.

Teaching and Learning Approach

I want students to learn how to *think with data*. I bring experience in statistics, analytics, applied data science, and hospitality to the classroom, and I genuinely enjoy teaching this material. Class should have energy. We will work through real hospitality problems, test ideas, and learn from results that do not go as planned. The point is to understand why a method makes sense and what the evidence allows us to conclude.

I also want students to take the wheel. Good learning requires preparation, curiosity, practice, and a willingness to ask for help. Modern data work depends on useful resources, so we will learn to use R, documentation, online materials, coding assistants, and generative AI responsibly. These tools can help students learn and solve problems, but they cannot do the thinking for them. Students must understand their work, check it carefully, follow the rules of each assignment, and be able to explain the choices they made.

Assessment

Assessment category	Weight
Professionalism and participation	10%
Homework and in-class assignments	30%
Midterm exam/project	20%
Final exam/project (two parts)	40%
Total	100%

Professionalism and Participation (10%)

Professionalism matters because the habits students develop in class shape their personal growth, their reputation, and the way others experience working with them. It also reflects what employers and colleagues expect in the real world. Students should arrive prepared and on time, communicate respectfully, follow through on responsibilities, contribute to class activities, and take ownership of their work. Attendance alone does not earn full credit, but consistent and thoughtful participation is difficult without it.

Homework and In-Class Assignments (30%)

Assignments provide practice applying course concepts, choosing appropriate methods, checking assumptions, interpreting results, and communicating statistical evidence. Submit assignments through WebCampus (Canvas). Assignment instructions, due dates, grades, and feedback will also be posted there.

Midterm Exam/Project (20%)

The midterm assesses conceptual understanding and the ability to analyze and interpret data in R. It may include applied data analysis, interpretation of R output, and evaluation of statistical evidence in hospitality, tourism, or leisure research.

Final Exam/Project (40%)

The final assessment has two components:

- an applied take-home data analysis project (30%); and
- an online multiple-choice final quiz in WebCampus (Canvas) (10%).

Specific requirements, datasets, rubrics, and deadlines will be provided in WebCampus (Canvas).

Standard for Statistical Work

Strong work does more than reproduce software output. It demonstrates understanding of the problem, translates the problem into statistical terms, selects and executes an appropriate method, examines relevant assumptions, and interprets the result accurately in context. Work that contains unexplained output, omits essential diagnostics, or makes unsupported claims will not earn full credit.

Grades

A	93–100%	A–	90–92.9%	B+	87–89.9%
B	83–86.9%	B–	80–82.9%	C+	77–79.9%
C	73–76.9%	C–	70–72.9%	D+	67–69.9%
D	63–66.9%	D–	60–62.9%	F	Below 60%

Grades are determined by the weighted categories above. Scores are not rounded unless announced otherwise. Students are responsible for monitoring their grades and promptly reporting possible recording errors.

Late Work

I will accept late work, but a 10 percentage point penalty will be applied for every calendar day that the work is submitted past the due date. For example, an assignment submitted one day late can earn no more than 90%, and an assignment submitted two days late can earn no more than 80%. The submission time recorded in WebCampus (Canvas) will be used to determine the penalty.

Tentative Weekly Schedule

The schedule is a planning guide and may change based on the pace of the class. Changes will be announced in class and through WebCampus (Canvas). Assignment instructions and deadlines posted in WebCampus (Canvas) are authoritative.

Week	Dates	Teaching focus	Coursework and milestones
1	Jan. 19	Martin Luther King Jr. Day Recess	No class

Week	Dates	Teaching focus	Coursework and milestones
2	Jan. 26	Course introduction; installing R and RStudio; importing data; quantitative and categorical variables; numerical summaries; tables and visualizations	Homework 1 module: summarizing and visualizing data
3	Feb. 2	Casino games as probability examples; sample spaces and events; elementary probability; random variables; binomial and normal distributions	R practice with probability and simulation
4	Feb. 9	Samples and populations; sampling variability; sampling distributions; standard error; the central limit theorem	Preparation for statistical inference
5	Feb. 16	Presidents' Day Recess	No class
6	Feb. 23	Confidence intervals for means and proportions; confidence intervals for differences between groups; interpretation and assumptions	Homework 2 module begins
7	Mar. 2	Logic of hypothesis testing; null and alternative hypotheses; test statistics; p-values; one-sample and two-sample tests; practical and statistical significance	Homework 2 and midterm project
8	Mar. 9	Analysis of variance; comparing several means; the F test; assumptions; follow-up comparisons; interpreting R output	Homework 4 module: ANOVA
9	Mar. 16	Spring Break Recess	No class
10	Mar. 23	Association and causation; correlation; simple linear regression; slope and intercept; prediction; residuals and model fit	Homework 3 module: correlation and ordinary least squares regression
11	Mar. 30	Multiple linear regression; interpreting coefficients; indicator variables; model comparison; prediction with several explanatory variables	Homework 5 module begins
12	Apr. 6	Multicollinearity; variance inflation factors; consequences for interpretation; possible responses to correlated predictors	Multiple regression practice
13	Apr. 13	Multiple regression diagnostics; linearity; constant variance; normality of residuals; influential observations; model limitations	Homework 5: multiple linear regression
14	Apr. 20	Multiple regression examples; selecting and defending a model; chi-square tests for categorical data; goodness of fit and independence	Final project preparation
15	Apr. 27	Study week; integration across methods; project support; interpretation and reporting workshop	Final project work and individual questions
16	May 4	Course synthesis; communicating results for research and management decisions	Final project and final assessment

Administrative Requirements

Makeup Classes

Make-up opportunities are only allowed with an excused absence (Note: Job or anything work related is not an excused absence). The instructors will follow all university policies regarding making up work due to absences for religious holidays or school-sponsored athletic and extracurricular activities.

Netiquette

It can be easy to forget that real people are reading our messages. In online communication, readers cannot see your body language or hear your tone, so a message may come across differently than you intended. Read each post or message before sending it, and communicate with the same care and respect you would use in person. Additional guidance is available in UNLV's [online netiquette resource](#).

Respect everyone participating in this learning community by:

- Honoring each person's right to an opinion
- Respecting the right of others to disagree
- Responding honestly, thoughtfully, and respectfully without using foul or abusive language
- Signing your name to each contribution you choose to make
- Protecting your privacy and the privacy of others by not sharing information that is private or potentially embarrassing
- Being constructive when responding to others in the class
- Being willing to clarify a statement that others may have misunderstood or misinterpreted

Special Note about Anger

Do not send a message while you are angry. Step away, reread it later, and make sure it says what you actually mean. Avoid writing in all capital letters because readers interpret it as shouting and may see it as aggressive.

Office Hours and Course Questions

Electronic mail can be effective for many types of communication. What should you do if you are having a problem with some aspect of the course? First, you should check your syllabus and course schedule. If need be, please contact your instructor within scheduled office hours to speak on the phone or to schedule an in-person virtual meeting (must schedule 24 hr prior) to discuss. Email is the best way to schedule a proposed meeting as the instructor is not always in the office during "office hours."

The instructor will check emails and answer questions during the office hours listed at the beginning of the syllabus. If you email after that time you may not get a response until the next office hours. Emails sent after office hours on Friday will not be responded to until Monday office hours, do not leave questions until right before an assignment is due.

Format for Written Assignments

Points will be deducted for assignments that do not follow the requirements below or look unprofessional. Unless an assignment states otherwise, submit both a rendered PDF report and the complete `.Rmd` source file used to produce it. It is your responsibility to ensure that both files can be opened and that the `.Rmd` file reproduces the submitted report.

- 12-point Times New Roman font with 1-inch margins.
- 8 $\frac{1}{2}$ x 11 paper, portrait orientation
- 1.5-inch spacing
- Use tables to display data or small amounts of information in categories.
- Use headings and subheadings to organize information.
- Use bullet points and short, focused paragraphs instead of lengthy discussions.
- To obtain a high grade for your effort it is highly recommended you proofread before submitting your assignment.
- Check grammar, punctuation, and spelling.
- Your name should be on every assignment submitted
- The PDF should answer each question in the order presented and include readable, labeled tables and figures.
- The `.Rmd` file should include all code needed to reproduce the analysis and report.
- All group assignments should have a cover sheet listing the names, positions and contributions of each member.
- References must be in APA format and must include a title, date and author even if they are from the internet. References simply listed with web addresses will receive no credit. Visit www.apastyle.org for more information. Any text with more than 6 words quoted from another source must be in quotes and referenced correctly.

Copying material greater than 6 words is not permitted, even with a citation. Paraphrase your support materials. Failure to follow this rule will be considered plagiarism and reported to Academic Affairs.

Teaching Practices

As UNLV Hospitality College faculty members, we aim to create a positive learning environment that helps students learn effectively and develop into hospitality and tourism professionals. We will:

- Treat students with respect and integrity while maintaining professional relationships centered on their learning and best interests

- Set clear and consistent expectations for coursework, behavior, timekeeping, and professionalism, and address concerns fairly and sensitively
- Prepare thoroughly, stay current in the subject and its teaching practices, and present course material from a broad and practical perspective
- Encourage students to think critically and creatively, apply what they learn, and move beyond memorization and textbook knowledge
- Use clear communication, varied teaching strategies, and appropriate resources to support different students and learning needs
- Provide meaningful and timely feedback, consider student input, and reflect on our own practice to improve teaching and learning

Students are expected to follow the [UNLV Student Conduct Code](#).

University Policies

- [Academic Policies](#)
- [Hospitality Student Handbook \(PDF\)](#)
- [University Policies webpage](#)
- [Copyright policy information](#)

Accessibility

UNLV and the [Nevada System of Higher Education](#) require digital educational materials, including syllabi, to be accessible, in alignment with equal opportunity mandates by the Americans with Disabilities Act (ADA). The [Office of Accessibility Resources](#) offers [interactive training sessions](#) to help UNLV personnel create digital syllabi and other educational materials in accessible formats. For more information, contact the Office of Accessibility Resources.

Americans with Disabilities Act Accommodations

For all accommodation determinations allowed under the Americans with Disabilities Act, please contact the [Disability Resource Center](#), located in the Campus Resource Center (CRC), across Harmon from the Lied Library, telephone (702) 895-0866.

Responsible Use of Generative AI

I encourage students to use generative AI and other technology when it helps them learn, but I will not accept AI slop. AI slop includes generic filler, irrelevant material, invented facts or citations, careless analysis, writing that does not answer the question, or any work that the student cannot explain and defend. Submitting pages of unreviewed AI output is not a responsible use of the tool. If you use AI, verify the information, internalize the material, and rewrite it in your own words and voice. Include a brief disclosure that identifies the tool and explains how you used it.

Work that contains AI slop will receive an immediate grade of 0%. The student will be given an opportunity to redo the assignment using the feedback and deadline I provide. In the real world,

you cannot send careless AI output to a client, boss, or customer. The same standard applies in this class. I also consider it disrespectful to expect someone else (like myself) to spend time reading pages of material that you did not take the time to review yourself.

Collaboration and Academic Integrity

The permitted level of collaboration will be stated for each assessment. Discussion and peer learning may be encouraged, but individually submitted work must represent the student's own analysis and writing unless group work is explicitly authorized. Sharing completed answers, submitting another person's work, allowing one's work to be copied, fabricating results, or presenting ideas or language without appropriate attribution may constitute academic misconduct.

Assignment instructions may set additional requirements for collaboration, generative AI, or automated coding tools. Students remain responsible for the accuracy, reproducibility, attribution, and integrity of everything they submit.

Additional University Policies and Resources

Religious Holidays and University-Sponsored Activities

Notify the instructor in writing within the timeframe required by university policy if a religious observance or authorized university-sponsored activity will affect attendance or coursework. Reasonable opportunities to complete affected work will be provided in accordance with university policy.

Academic Support and Writing Assistance

UNLV provides academic assistance through the Academic Success Center and writing support through the Writing Center. Students are encouraged to use these services before difficulties become urgent. See <https://www.unlv.edu/asc> and <https://writingcenter.unlv.edu/>.

Syllabus Acknowledgment

Enrollment in the course signifies responsibility for reading this syllabus, consulting the detailed instructions and deadlines in WebCampus (Canvas), and asking questions when expectations are unclear. The instructor may revise the syllabus when necessary; material changes will be communicated to the class.