

## Big Data Analytics for Business MIS 769-001

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### UNIVERSITY OF NEVADA LAS VEGAS

#### Lee Business School: Information Systems

#### Fall 2026

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|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Instructor Name     | Richard J. Young, Ph.D. · <a href="mailto:ryoung@unlv.edu">ryoung@unlv.edu</a>                                                                                                      |
| Graduate Assistant: | Naman Patel, MS MIS · <a href="mailto:naman.patel@unlv.edu">naman.patel@unlv.edu</a>                                                                                                |
| Time(s):            | Asynchronous, no fixed meeting time (online; weeks run Monday through Sunday)                                                                                                       |
| Class Location      | WebCampus (Canvas), online                                                                                                                                                          |
| Office Hours:       | <b>Mondays and Wednesdays</b> , 3:00-4:00 p.m., in BEH 328 (drop in - no appointment needed).<br><b>Friday</b> afternoons by appointment, in person or on Zoom (link in WebCampus). |
| Office:             | BEH 328                                                                                                                                                                             |
| Office Phone:       | 1 (702) 895-1768                                                                                                                                                                    |
| WebCampus:          | <a href="https://webcampus.unlv.edu">https://webcampus.unlv.edu</a>                                                                                                                 |
| UNLV People:        | <a href="https://www.unlv.edu/people/richard-young">https://www.unlv.edu/people/richard-young</a>                                                                                   |
| Faculty website:    | <a href="https://young.faculty.unlv.edu">https://young.faculty.unlv.edu</a>                                                                                                         |

Note: The instructor reserves the right to change the syllabus regarding how the course is administered. When the syllabus is changed, the updated version is posted to WebCampus.

## Course Description

Focuses on big data analytics concepts, tools, and methods within the business environment. Explores big data principles and information technology innovation in organizations. Includes multiple tools and statistical concepts related to contemporary big data analysis.

The data management and analysis landscape is evolving quickly, and this course reflects that. We focus on Big Data, Natural Language Processing, Large Language Models, and multi-modal AI including generative models and AI agents, with both theoretical grounding and hands-on practice. The four major sections are Big Data Fundamentals, NLP, Large Language Models, and Multi-Modal AI.

We use Python as the primary language, leveraging the Hugging Face ecosystem (Transformers, Datasets, Spaces) along with Google Colab for all practical exercises. Work includes weekly homework, quizzes, and larger analytical projects. This class operates as close to a real-world business environment as possible. By the end you will have a solid foundation in Big Data, NLP, LLMs, and multi-modal AI, with practical experience deploying these technologies.

## Course Prerequisite(s)

MIS 740 or MIS 768, or DA 621 and DA 651, or equivalent. Enrollment requires admission to a graduate program in MIS or Data Analytics and Applied Economics, or consent of the Director of MIS Graduate Programs.

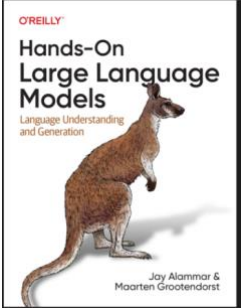
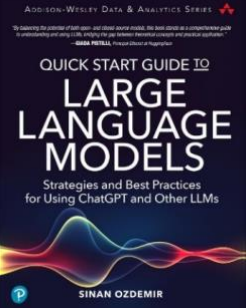
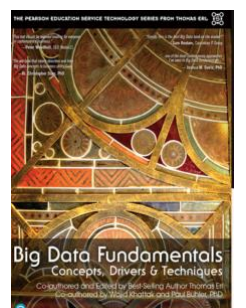
## Learning Outcomes / Course Objectives

- **Understanding of Big Data Fundamentals:** Students will gain a comprehensive understanding of the basics of Big Data, including data processing techniques and the complexities of managing large data sets with advanced technologies.
- **Proficiency in Big Data Technologies:** Students will become proficient in Big Data technologies and analytics techniques, including MapReduce in Python and abstracting MapReduce concepts.
- **Foundational Knowledge in NLP:** Students will acquire foundational knowledge in Natural Language Processing, including text basics such as tokens, stems, and pre-processing, and advanced techniques in text vectorization, classification, and clustering.
- **Mastery of Large Language Models:** Students will master the concepts and practical applications of Large Language Models, learning how to build, implement, and apply these models in various scenarios.
- **Practical Skills in Multi-Modal Models:** Students will develop practical skills in multi-modal models, particularly in understanding and applying models like Stable Diffusion for generative AI applications.
- **Project Development and Implementation Skills:** Students will learn to develop and implement projects, especially in the realm of LLMs, using tools like Hugging Face and Colab.
- **Application of Theoretical Concepts in Real-World Scenarios:** Students will be able to apply theoretical concepts learned in the course to real-world scenarios.
- **Presentation and Communication Skills:** Through project presentations and various assignments, students will enhance their presentation and communication skills, crucial for articulating complex concepts in data science and AI.

# Texts

There is no required textbook to buy. Weekly readings are free PDFs linked in each week's module in WebCampus. The titles below are optional deeper dives.

## Optional deeper dives (paid; not required)

|                                                                                                                                          |                                                                                                                                                                                                                                      |                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--|
| <b>Hands-On Large Language Models</b>                                                                                                    | Jay Alamar and Maarten Grootendorst. O'Reilly, 1st ed. (2024). ISBN-13 978-1098150969. Code: <a href="https://github.com/HandsOnLLM/Hands-On-Large-Language-Models">https://github.com/HandsOnLLM/Hands-On-Large-Language-Models</a> |    |  |
| <b>Quick Start Guide to Large Language Models: Strategies and Best Practices for ChatGPT, Embeddings, Fine-Tuning, and Multimodal AI</b> | Author: Sinan Ozdemir<br>ISBN 13: 978-0135346563<br>ISBN 10: 0135346568                                                                                                                                                              |    |  |
| <b>Big Data Fundamentals – Concepts, Drivers, and Techniques</b>                                                                         | Author: Thomas Erl<br>Publisher: Pearson; 1 edition (2016)<br>ISBN-13: 978-0134291079<br>ISBN: 0134291077<br>ISBN-13 – Vital Source: 9780134291208                                                                                   |   |  |
| <b>Prompt Engineering for Generative AI: Future-Proof Inputs for Reliable AI Outputs</b>                                                 | by James Phoenix (Author), Mike Taylor (Author)<br>ISBN-13: 978-1098153434<br>ISBN-10: 109815343X                                                                                                                                    |  |  |

# Library and Information Resources

Librarians are available to consult with students on research needs, including developing research topics, finding information, and evaluating sources. To make an appointment with a subject expert for this class, contact one of the librarians below directly, or find another subject specialist in the Libraries' staff directory at <https://www.library.unlv.edu/about/staff>. You can also ask library staff questions via chat and text at <https://ask.library.unlv.edu/>.

- Patrick Griffis (Business): [patrick.griffis@unlv.edu](mailto:patrick.griffis@unlv.edu)
- Sue Wainscott (Engineering): [sue.wainscott@unlv.edu](mailto:sue.wainscott@unlv.edu)
- Alyssa Renteria (Data Guide): [https://guides.library.unlv.edu/prf.php?account\\_id=343426](https://guides.library.unlv.edu/prf.php?account_id=343426)

Interlibrary loan is a good way to get materials from other universities, such as case studies. The library also has a video production studio and a podcast studio.

# Evaluation Methods

This class focuses on business intelligence and transferable skills for the real world, so exams are minimal and **critical thinking is emphasized**. Evaluation focuses on writing, presenting, extracting, and generating knowledge from data. Grading is on straight points, not weighted categories: the course totals 1,185 points.

| Category                                                                                                                                                          | Points | Share | Est. time      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|----------------|
| Discussions: 14 @ 20 pts - initial post Wednesday 10 p.m. (10) + reply Sunday 10 p.m. (10), graded as checkpoints                                                 | 280    | 24%   | 45 min / week  |
| Quizzes: 5 @ 20 pts (Setup, Syllabus, Big Data, NLP, LLM)                                                                                                         | 100    | 8%    | 15 min each    |
| Homework: HW1-HW10 @ 40 pts                                                                                                                                       | 400    | 34%   | 1-2 hrs / week |
| Tasks and Projects:<br>Analyze Me #1 (80),<br>Analyze Me #2 (100),<br>Group Teach Back<br>(75 group + 25 individual peer review),<br>Mid-Term (50),<br>Final (75) | 405    | 34%   | 2-4 hrs / week |
| TOTAL                                                                                                                                                             | 1,185  | 100%  |                |
|                                                                                                                                                                   |        |       |                |

## Projects and Exams

| Item                                                               | Description                                                                                                                                                                                          |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analyze Me #1 (80 pts)                                             | Business report using NLP and data analysis on a topic of your choice.                                                                                                                               |
| Analyze Me #2 (100 pts)                                            | Advanced business report using LLM and RAG techniques.                                                                                                                                               |
| Group Teach Back<br>(75 pts group + 25 pts individual peer review) | Team presentation teaching the class a tool or technology you learned. Each member also receives an individual peer-review score (25 pts) from teammates' structured feedback on their contribution. |
| Mid-Term Exam (50 pts)                                             | Take-home exam covering Weeks 1-7.                                                                                                                                                                   |
| Final Exam (75 pts)                                                | Take-home exam covering all course content.                                                                                                                                                          |

**Early submission feedback:** For the Analyze Me assignments and the Group Teach Back, submit at least 3 days before the due date, and I will review and provide feedback. You may then revise and resubmit. Your grade will never go down from that feedback; it can only stay the same or increase. This is a real advantage for students who plan ahead.

## Grading Scale

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| A 94-100    | A- 90-93.99 | B+ 87-89.99 | B 84-86.99  |
| B- 80-83.99 | C+ 77-79.99 | C 74-76.99  | C- 70-73.99 |
| D+ 67-69.99 | D 64-66.99  | D- 60-63.99 | F 00-59.99  |

## Assignment Due Dates

Unless an assignment page states otherwise, homework, quizzes, projects, and examinations are due Sunday at 10:00 p.m. Pacific Time at the end of the assigned week. Weekly discussions follow a different schedule: the **initial post is due Wednesday at 10:00 p.m.**, and the reply is **due Sunday at 10:00 p.m.** The Analyze.me projects are due on the last day of the month in October and November. All deadlines appear on the WebCampus calendar. If a deadline is changed, the instructor will announce the change through WebCampus and update the affected assignment or syllabus schedule.

## Quizzes, exams, projects, Teach Back

| Item                                         | Pts | Opens      | Due                  | Wk |
|----------------------------------------------|-----|------------|----------------------|----|
| Setup Quiz                                   | 20  | Mon Aug 24 | Sun Sep 6, 10:00 PM  | 2  |
| Syllabus Quiz                                | 20  | Mon Aug 24 | Sun Sep 6, 10:00 PM  | 2  |
| Big Data Quiz                                | 20  | Wed Sep 2  | Sun Sep 13, 10:00 PM | 3  |
| NLP Quiz                                     | 20  | Mon Sep 7  | Sun Sep 20, 10:00 PM | 4  |
| Analyze Me #1 - Text Data Exploration        | 80  | Mon Sep 1  | Wed Sep 30, 10:00 PM | 6  |
| LLM Quiz                                     | 20  | Mon Oct 5  | Sun Oct 18, 10:00 PM | 8  |
| Mid-Term Exam                                | 50  | Mon Oct 5  | Sun Oct 18, 10:00 PM | 8  |
| Analyze Me #2 - LLM-Enhanced Text Analysis   | 100 | Wed Oct 1  | Sat Oct 31, 10:00 PM | 10 |
| Group Teach Back - NLP/LLM Tool Presentation | 75  | Mon Nov 16 | Fri Dec 11, 10:00 PM | 16 |
| Teach Back - Individual Peer Review          | 25  | Mon Nov 16 | Fri Dec 11, 10:00 PM | 16 |
| Final Exam                                   | 75  | Tue Dec 1  | Sat Dec 12, 10:00 PM | 16 |

# Course Procedures

## WebCampus

The course uses the WebCampus (Canvas) portal, which holds all course resources: slides, readings, the posted syllabus, assignments, and grades. You must log in to WebCampus to access the course.

## Communication and Response Time

The best way to reach me is a WebCampus (Canvas) message. University email runs across two different domains, and messages sent from outside can end up in spam; WebCampus messages always reach me. I aim to respond within 48 hours. If you have not heard back from me within 48 hours, follow up by emailing [ryoung@unlv.edu](mailto:ryoung@unlv.edu) directly and include your course and section in the subject line.

## Engagement / Attendance

This is a fully online, asynchronous course; there are no physical class sessions and nothing meets at a fixed time. Engagement is measured by what you do: weekly discussion posts, homework, quizzes, and projects. The course is heavily hands-on, and students who stop engaging fall behind quickly. You are responsible for all material posted each week, whether or not it is directly graded.

## Class Assignments

- Class assignments need to be turned in individually, except the Group Teach Back, which is a team assignment.
- You can consult resources while doing the assignments.
- The assignments will vary in structure. Details about assignments will be provided when they are assigned.

## Late Work

Unless required by UNLV policy, an approved DRC accommodation, or an exception approved by the instructor, late assignments are not accepted. Assignments open in advance, and students are encouraged to submit early. Students who anticipate missing a deadline because of a religious observance, official UNLV activity, approved accommodation, serious illness, emergency, or other substantial circumstance should contact the instructor as soon as practical. Documentation may be requested when appropriate, but students should not submit private medical details beyond what is reasonably necessary or provided through the DRC.

An approved makeup must normally be arranged within seven calendar days of the missed examination unless a different period is required by UNLV policy, a DRC accommodation, or circumstances approved by the instructor.

## Exams

There are two take-home exams: a Mid-Term (50 pts) covering Weeks 1-7 and a Final (75 pts) covering all course content. Neither is timed in a proctored session; both are submitted through WebCampus.

Do not miss an exam. If you miss one without a valid excuse, your grade on that exam will be zero. If an exam is missed, you must (a) contact me as soon as possible via email, telephone, or in person, and (b) produce documentation describing the valid reason. Examples of valid excuses are serious illness and participation in University-sponsored events. Illness requires a written excuse from a doctor. For a University-sponsored event, inform me before the exam and submit documentation. Contact me within seven days of a missed exam to arrange a make-up; no make-up exams are given after seven days.

# University Policies

These are UNLV's policies. They apply to every student in every class at the University, are maintained online, and apply in full to this course:

Academic Policies for Students: <https://www.unlv.edu/policies/students>



Scan for UNLV Academic Policies for Students.

## Academic Integrity

Academic integrity is a legitimate concern for every member of the University community. We 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 Student Academic Integrity Policy and are encouraged to always take the ethical path whenever faced with choices. Students enrolling at UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's educational mission. One example of academic misconduct is plagiarism: using the words or ideas of another person, from the Internet or any other source, without proper citation. See <https://www.unlv.edu/osrr/academic-integrity/policy>

## Accessible Course Materials

Course materials are intended to be provided in accessible formats. Instructional videos will be delivered through approved UNLV systems with captions or transcripts. Students who encounter an accessibility barrier should notify the instructor and may also contact the Disability Resource Center to request accommodations.

## Auditing a Course

Auditing a course allows a student to continue attending the sessions associated with the course, but the student will not earn a grade for any component. Students who audit receive the same educational experience as students taking the course for a grade, but are excused from exams, assessments, and other evaluative measures whose primary purpose is assigning a grade.

## Copyright

The University requires all members of the University Community to familiarize themselves with and 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 student or employee violations of fair use laws. Violations could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information is available at <https://www.unlv.edu/provost/copyright>.

## Disability Resource Center (DRC)

The UNLV Disability Resource Center (DRC), located in the Campus Resource Center across Harmon Avenue from the Lied Library, coordinates accommodations and academic-access support for students with disabilities, temporary injuries, and pregnancy-related needs. Students who may need an accommodation should contact the DRC at <https://www.unlv.edu/drc> or 702-895-0866 as early as practical. Students already registered with the DRC should request their accommodations online each semester. After the instructor receives the official DRC notification, students are encouraged to contact the instructor so that the accommodations can be implemented effectively in WebCampus materials, assignment timing, recorded presentations, peer-feedback activities, group work, quizzes, and other course requirements. Students do not need to disclose their diagnosis or

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private medical information to the instructor. Students who encounter an accessibility barrier in any course material should notify the instructor so that the barrier can be corrected or an accessible alternative can be provided.

## **Diversity Statement**

As an institution of higher learning, UNLV represents a rich diversity of human beings among its faculty, staff, and students, and is committed to cultivating a campus environment that values diversity, practices inclusion, and actively promotes equitable experiences and outcomes. Accordingly, the University supports understanding and appreciation of all members of its community. See University Statements and Compliance, <https://www.unlv.edu/about/statements-compliance>. A successful learning experience requires mutual respect and trust between students and the instructor. Accordingly, the instructor asks that students be willing to listen to one another's points of view, acknowledging that there may be disagreements, keep discussion and comments on topic, and use first person, positive language when expressing their perspectives.

## **Final Examinations and Study Week**

The University requires final examinations given at the end of a course to occur in accordance with the official Final Exam Schedule, available at <https://www.unlv.edu/registrar/calendars>. The take-home Final Exam, worth 75 points, is due Saturday, December 12, 2026, at 10:00 p.m. Pacific Time and must be submitted through WebCampus. There is no in-person or synchronous final examination meeting.

## **Identity Verification and Online Course Requirements**

All UNLV students must use their Campus-issued ACE ID and password to log in to WebCampus-Canvas. UNLV students enrolled in online or hybrid courses are expected to read and adhere to the Student Academic Integrity Policy, <https://www.unlv.edu/osrr/academic-integrity/policy>, which states that "acting or attempting to act as a substitute for another, or using or attempting to use a substitute, in any academic evaluation or assignment" is a form of academic misconduct. Intentionally sharing ACE login credentials with another person may be considered an attempt to use a substitute and could result in investigation and sanctions. Students are also expected to adhere to the Acceptable Use of Computing and Information Technology Resources Policy, <https://www.it.unlv.edu/policies/acceptable-use-computing-and-information-technology-resources-policy>, which prohibits sharing university accounts without authorization.

## **Incomplete Grades**

A grade of "I" (Incomplete) is a temporary, neutral mark that is excluded from GPA calculation. An Incomplete may be considered when a student has been performing satisfactorily but, for reasons beyond the student's control, cannot complete the course requirements during the instructional period. Nonattendance, poor performance, or a desire to repeat the course is not an acceptable reason for an Incomplete. The student may request an Incomplete, but the instructor determines whether the circumstances qualify and establishes in writing the remaining work, completion deadline, and conditions for earning a final grade.

**Undergraduate courses:** The student must have completed at least three-fourths of the semester with satisfactory performance. The remaining work must be completed by the last day of the following regular semester or by an earlier deadline established by the instructor. If the requirements are not completed by the applicable deadline, the "I" will convert to an "F," or to a "U" in a satisfactory/unsatisfactory course.

**Graduate courses:** For a content or lecture course, the student must have completed the majority of the coursework with a cumulative average of "B" or better. The remaining requirements must be completed within one calendar year or by an earlier deadline established by the instructor. If the requirements are not completed by the applicable deadline, the "I" will convert to an "F." An undergraduate student enrolled in a graduate-level course must complete the remaining work within one semester.

A student completing an Incomplete does not register for the course again but makes individual arrangements with the instructor who assigned the "I." The complete and current policy is available in [UNLV Policies for All Students](#).

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## **Mental Health, Crisis, and Student Support**

UNLV students have access to mental health and student support resources. Student Counseling and Psychological Services (CAPS) provides counseling and related services and can be reached at 702-895-3627 or <https://www.unlv.edu/caps>. Students may also use YOU@UNLV and the support resources listed in UNLV's current Policies for All Students. The 988 Suicide & Crisis Lifeline is available 24 hours a day by calling or texting 988, or by chatting at <https://988lifeline.org>, for anyone experiencing a mental-health, substance-use, or emotional crisis or who simply needs immediate support. In an immediate life-threatening emergency, call 911.

## **Missed Classwork**

Any student missing quizzes, examinations, or other coursework because of observance of religious holidays will be given an opportunity during that semester to make up the missed work. It is the responsibility of the student to notify the instructor within the first 14 calendar days of the course of their intention to participate in religious holidays that do not fall on state holidays or periods of class recess. See the Missed Classwork policy under Registration Policies on the Academic Policies webpage, <https://www.unlv.edu/policies/students>.

In accordance with Faculty Senate policy, students who represent UNLV in any official extracurricular activity will also have the opportunity to make up assignments, provided the student submits official written notification to the instructor no less than one week prior to the missed work. The spirit and intent of the policy is to offer fair and equitable assessment opportunities to all students. This policy does not apply where completing the assignment at an alternate time would impose an undue hardship that could be reasonably avoided. Disagreements can be appealed to the Department Chair, the Dean, or the Faculty Senate Academic Standards Committee.

## **Online Conduct and Recordings**

Students have a responsibility to conduct themselves in ways that do not interfere with the rights of other students to learn or of instructors to teach. In this fully online course, that responsibility applies to discussion boards, group work, peer-feedback activities, course messages, and any live or recorded interactions.

Students are specifically prohibited from recording classes without instructor authorization, including online and remote sessions, whether audio only or video and audio. The instructor may rescind permission at any time. If a student does not comply with established requirements or obstructs the class's functioning, the instructor may initiate an administrative withdrawal.

Instructors who record sessions will inform students in advance. Recorded sessions may not be broadly released; they are made available only to students enrolled in the class during that academic term. Recordings must be stored securely and are subject to the Nevada System of Higher Education's Records Retention Policy, meaning they can only be deleted 120 days after the end of class. Class recordings are protected from disclosure as part of an educational record under the Family Educational Rights and Privacy Act (FERPA). <https://www.unlv.edu/policies/students>

## **Rebelmail**

Rebelmail is UNLV's official email system for students, and by University policy instructors and staff should only send emails to students' Rebelmail accounts. Rebelmail is one of the primary ways students receive official University communications, deadlines, and announcements. Sending messages within WebCampus-Canvas is also acceptable.

## **Title IX**

UNLV is committed to providing an environment free of all forms of unlawful discrimination, including sexual and gender-based discrimination, harassment, and violence such as sexual assault, intimate partner violence, and stalking. If you, or someone you know, has experienced or is experiencing these behaviors, know that you are not alone; resources and support are available. To learn more or report an incident, visit the Office of Equal Employment and Title IX website at

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<https://www.unlv.edu/compliance>, or contact the Title IX Coordinator (702-895-4055, [titleixcoordinator@unlv.edu](mailto:titleixcoordinator@unlv.edu)). Please be aware that as an instructor I am not a confidential resource, and I will need to report incidents of sexual misconduct to UNLV's Title IX Coordinator. You can also report directly using the online form at [https://cm.maxient.com/reportingform.php?UnivofNevadaLasVegas&layout\\_id=18](https://cm.maxient.com/reportingform.php?UnivofNevadaLasVegas&layout_id=18). For confidential support in matters of sexual violence, relationship or family violence, or stalking, contact the Care Center at <https://www.unlv.edu/carecenter> or 702-895-0602.

## **Tutoring and Coaching**

The Academic Success Center (ASC), at the Claude I. Howard Building, provides tutoring, academic success coaching, and other academic assistance. For tutoring subjects, times, and other ASC programs, visit <https://www.unlv.edu/asc> or call 702-895-3177.

## **UNLV Writing Center**

The UNLV Writing Center provides free assistance to students at every stage of the writing process, including help with understanding an assignment, developing ideas, organizing a document, revising a draft, and improving writing skills. Students may choose in-person consultations, live virtual consultations, or asynchronous Online Writing Lab (OWL) feedback. The Writing Center's primary location is on the second floor of the Campus Resource Center, with additional drop-in locations available during the semester. Appointments can be scheduled through the Rebel Success Hub. For current services, locations, and hours, visit <https://www.unlv.edu/writing-center> or contact [writingcenter@unlv.edu](mailto:writingcenter@unlv.edu).

## **UNLV Land Acknowledgement**

UNLV is situated on the traditional homelands of Indigenous groups, including the Nuwu or Nuwuvi, Southern Paiute People, descendants of the Tudu, or Desert People. We honor and offer gratitude for those who have stewarded the land; for the land itself; and for the opportunity to cultivate a thriving, diverse, inclusive, and just scholarly community here today that works for a better tomorrow for all.

# Lee Business School Policies

These come from the Lee Business School and the UNLV Office of Online Education. They sit on top of the University policies above and apply to courses in this college.

## AI at UNLV: Lee Business School guidance

The Lee Business School, together with the UNLV Office of Online Education, publishes guidance on AI use in coursework. That guidance sets out four possible course policies (AI use prohibited; AI use with permission; AI use encouraged with acknowledgment; AI use encouraged without acknowledgment) and leaves the choice to each instructor.

This course adopts the Lee Business School **Encouraging Use with Acknowledgment** approach. The Instructor Policies section below explains what that approach means in practice, including which tools may be used on each assignment, the applicable acknowledgment requirements, and how the course policy is evaluated and enforced. Unauthorized or inappropriate use of AI may constitute academic misconduct.

## Working with AI on confidential or sensitive data

Do not enter confidential, proprietary, personal, regulated, or restricted information into a public or personal AI service. This includes Social Security numbers, protected health information, student education records, customer or employee information, credentials, trade secrets, and nonpublic workplace or client data. Students who wish to use workplace or client data must obtain authorization from the organization or data owner and comply with all applicable organizational policies, legal requirements, and contractual restrictions. Instructor approval does not replace authorization from the organization that owns or controls the data. When authorization is uncertain, use public, synthetic, or instructor-provided data.

## Generative AI content notice

This course explores generative AI, including multimodal systems capable of producing text, images, code, and other forms of data. Outputs can be unpredictable and may occasionally be inaccurate, biased, offensive, inappropriate, or otherwise unexpected. Students are expected to evaluate these outputs critically and handle them professionally. If an output is disturbing or creates a concern, stop the interaction and contact the instructor; an alternative activity or source may be used when appropriate.

Generative AI can also produce biased, incomplete, or unrepresentative output. Throughout this course, students are expected to evaluate AI output critically, consider who is represented and who may be missing, identify embedded assumptions and limitations, and explain how those limitations affect the analysis.

## Video accessibility

Instructor-created course videos are hosted through Panopto and embedded in WebCampus. Automatic captions are enabled and reviewed for accuracy before release. Because technical terminology, names, code, and specialized concepts may still be captioned incorrectly, students should notify the instructor of any remaining errors. A corrected transcript or another accessible format will be provided when needed. Students seeking disability-related accommodations should request them through the DRC each semester and coordinate their implementation with the instructor.

# Instructor Policies

These are my policies for this specific course. Where the Lee Business School guidance leaves a choice to the instructor, this is the choice I have made and what it means for your work.

## Required Technology and Accounts

This online course requires regular access to a computer with a current web browser and a reliable internet connection. Coursework uses WebCampus, Google Colab, Python, and the Hugging Face ecosystem. Students may also use generative-AI and coding-assistance tools under the course AI policy. Students should create and test any required free accounts during the first week. No paid generative AI subscription is required unless clearly identified in advance as required course material.

Students who cannot access a required tool, encounter an accessibility barrier, or have concerns about entering information into an external service should contact the instructor promptly so that an appropriate alternative can be considered.

AI is transforming how business gets done, and that shift is accelerating. One of the most valuable skills you can develop is learning to use these tools efficiently, effectively, and in ways that deliver real results. That is a core goal of this course, which is exactly why the policy below is specific about where AI helps you learn and where it gets in the way.

## AI Use in This Course

AI use in this course is governed by Option 2: Encouraging Use (With Acknowledgment). You are allowed and encouraged to use AI and machine learning tools, provided you acknowledge their use. Different assignments teach different things, the specific expectations differ by assignment type; the table below states them. **Any unauthorized or inappropriate use of AI may be considered academic misconduct.**

| Assignment                                                       | Why you are doing it                                                                                                                                            | AI use                   | How you are expected to use AI                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weekly discussions<br>(280 pts, 14 @ 20: pos t<br>10 + reply 10) | Discussions are where you practice explaining technical ideas to a business audience in your own voice. Aligns with the presentation and communication outcome. | Yes, with acknowledgment | You may use AI to check grammar, look something up, or pressure-test an argument before posting. The post must be your own words and your own position, and a reply must respond to what your classmate actually wrote. Do not paste an AI-generated post. Add one line naming any tool you used.                                                              |
| Homework HW1-HW10<br>(400 pts, 40 each)                          | Each homework builds hands-on skill with the Hugging Face and Colab stack. Aligns with the Big Data technologies, NLP, LLM, and multi-modal outcomes.           | Yes, encouraged          | This is a course about building with these tools, and using a coding assistant is the professional norm you are here to learn. Use ChatGPT, Claude, Gemini, Copilot, or anything else to write, debug, and explain code. The requirement is that you can explain what every part of your submitted code does and why. Note the tools used.                     |
| Quizzes<br>(100 pts, 5 @ 20)                                     | The Setup, Syllabus, Big Data, NLP, and LLM checks exist to tell you and me whether the core concepts actually landed.                                          | Yes                      | Quizzes are open-resource, and that includes AI tools, along with your notes, readings, and lecture material. They are knowledge checks, so the honest play is to answer from your own understanding first and use AI to verify or fill gaps - the score only helps you if it reflects what you actually know. No acknowledgment line is needed inside a quiz. |

|                                                                                                           |                                                                                                                                                       |                                           |                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analyze Me #1 and #2<br>(180 pts: 80 + 100)<br><br><b>Sept 30 10 pm</b><br><b>Oct 31 10 pm</b>            | These are business reports where the analysis and the judgment are the assignment. Aligns with applying theoretical concepts to real-world scenarios. | Yes, with acknowledgment                  | AI is fine for code, for structuring the document, and for tightening prose. The topic, the analytical choices, the interpretation, and the business recommendation must be your own thinking. If a tool proposed the framing, say so and say what you changed.                                                                       |
| Group Teach Back<br>(100 pts: 75 group + 25 individual peer review)<br><b>Friday Dec 11</b>               | You teach the class a tool or technology you learned. Teaching something is the test of whether you understand it.                                    | Yes for preparation.<br>Not for delivery. | Use AI freely to research the tool, build the demo, and design the slides. The presentation must be delivered by your team in your own words, not an AI-generated voice, avatar, or a script read cold.                                                                                                                               |
| Mid-Term<br>(50 pts)<br><b>Oct 5 – 18th</b><br><br>Final<br>(75 pts), take-home<br><b>Dec 1 to Dec 12</b> | Both are take-home exams covering course content. They test whether you can reason about these systems, not whether you can retrieve facts.           | Yes, with acknowledgment (upon request.)  | Because these are take-home and open-resource, AI tools are permitted on the same terms as the rest of the course: disclose what you used, verify everything it produced, and note any errors you caught. The reasoning must be yours, and you must be able to explain and defend every answer you submit. See the exam policy below. |

# How to Acknowledge AI

When this policy requires acknowledgment, the amount of detail should be proportional to the role AI played in the work. The purpose is transparency, not paperwork.

**Short acknowledgment:** For limited assistance—such as checking grammar, improving sentence clarity, looking up a definition, formatting material, or debugging a small coding error—a single sentence naming the tool and explaining what it did is sufficient. Examples include: “ChatGPT checked my grammar and sentence clarity,” “Gemini helped me check whether my explanation was understandable,” and “Claude helped me locate a syntax error in the Python loop.”

**Detailed AI Use Note:** When AI materially contributes to the analysis, framing, code, interpretation, evidence, recommendation, or other substantive content, include a short paragraph explaining what the tool contributed, how its output was verified, any important error or limitation discovered, and what substantive work remains your own. Detailed AI Use Notes are required for the Analyze Me reports and take-home examinations when AI is used materially.

An acknowledgment must accurately describe the tool’s actual role. A short acknowledgment is sufficient for short or limited assistance, but it may not be used to conceal substantial AI-generated content. The assignment-specific rules in the table above determine whether a short acknowledgment, a detailed AI Use Note, or no acknowledgment is required.

## How This Is Checked and What Happens if the Policy Is Broken

I do not use automated AI-detection software to determine whether a student has violated this policy. Such tools are not sufficiently reliable for that purpose. This course instead uses assignment-specific disclosure, process evidence, and the student’s ability to explain and defend submitted work.

You must be able to explain and defend everything you submit. If there is a reasonable question about authorship or understanding, I may ask you to explain your code, sources, prompts, analytical choices, drafts, verification process, and what you tried that did not work. The purpose of that follow-up is to determine whether the submitted work represents your understanding and complies with the assignment-specific AI policy.

Failure to provide a required acknowledgment may result in reduced credit, up to and including a zero for the assignment, depending on the extent and significance of the undisclosed assistance. Using a short acknowledgment to conceal substantial AI-generated content, submitting materially AI-generated work that you cannot meaningfully explain, or presenting AI-generated analysis as your own independent work may constitute academic misconduct under the [UNLV Student Academic Integrity Policy](#). When appropriate, the matter will be handled through that policy and may be referred to the Office of Student Rights & Responsibilities.

If you are uncertain whether a particular use is allowed or how much acknowledgment is required, ask before submitting the work. It is better to clarify the requirement in advance than to submit work that does not comply with the policy.

## AI Use Policy for Exams

This course adopts the Lee Business School **Encouraging Use with Acknowledgment** approach.

The Mid-Term and Final are take-home, open-resource examinations. AI tools are permitted. A short acknowledgment is sufficient for limited assistance, such as checking grammar, sentence clarity, or formatting.

**Updated:** August 23, 2026

A detailed AI Use Note is required when AI contributes materially to an answer, analysis, calculation, interpretation, or code. The note must identify the tools used and explain what each tool contributed, how the output was verified, and any important limitation or error that was found and addressed. You remain responsible for every claim, calculation, citation, interpretation, and line of code submitted.

The reasoning must be your own. You may be asked to explain or defend any answer, analytical choice, calculation, or code submitted on an examination. AI may support your reasoning, but it may not replace your understanding or your ability to explain the answer.

AI tools are permitted in some form on every graded activity in this course, including the five quizzes, subject to the assignment-specific limits in the table above. No separate acknowledgment is required within a quiz unless the quiz instructions state otherwise. Permission to use AI for preparing an assignment does not authorize AI to replace a student's required analysis, explanation, presentation, or individual participation.

# Course Overview



| Week | Date       | Section      | Topic                                                              | Homework / Quiz                                     |
|------|------------|--------------|--------------------------------------------------------------------|-----------------------------------------------------|
| 1    | 08/24/2026 | Big Data     | Intro to Big Data & Data Processing                                | Setup Quiz + Syllabus Quiz                          |
| 2    | 08/31/2026 | Big Data     | Big Data Technologies and Analytics                                | HW1: Introduction to Data Processing                |
| 3    | 09/07/2026 | Big Data     | MapReduce in Python                                                | Big Data Quiz + HW2: MapReduce and PySpark          |
| 4    | 09/14/2026 | NLP          | Text Basics: Tokens, Stems, Pre-processing                         | NLP Quiz + HW3: Text Processing with spaCy and NLTK |
| 5    | 09/21/2026 | NLP          | Text Vectorization and Classification                              | HW4: Word Embeddings and Word2Vec                   |
| 6    | 09/28/2026 | NLP          | Advanced NLP + Topic Modeling                                      | HW5: Named Entity Recognition (NER)                 |
| 7    | 10/05/2026 | LLM: Using   | Introduction to LLMs: Types & Basics                               | HW6: Sentence Embeddings                            |
| 8    | 10/12/2026 | LLM: Using   | LLM Components: Embeddings & Attention                             | LLM Quiz                                            |
| 9    | 10/19/2026 | LLM: Applied | RAG Systems: Retrieval Augmented Generation                        | HW7: Build a RAG System                             |
| 10   | 10/26/2026 | LLM: Applied | Prompt Engineering & Fine-Tuning: LoRA                             | HW8: Prompt Engineering                             |
| 11   | 11/02/2026 | LLM: Applied | Transformers Deep Dive + Text Generation                           | HW9: Text Gen + Deploy to Spaces                    |
| 12   | 11/09/2026 | LLM: Applied | AI Agents & Business Automation                                    | HW10: Business Agent                                |
| 13   | 11/16/2026 | MultiModal   | ViT & Diffusion Models: Vision Transformers & Image Generation     |                                                     |
| 14   | 11/23/2026 | Break        | Thanksgiving break (Nov 26). Optional: AI Privacy & Ethics lecture | No assignments                                      |
| 15   | 11/30/2026 | MultiModal   | CLIP & Multimodal Applications                                     |                                                     |
| 16   | 12/07/2026 | Review       | Course Review and Final Exam                                       |                                                     |