Welcome to ADTA5250/IPAC4250

I am so excited to have you in class this semester and I look forward to working with all of you throughout the course.

- **ADTA 5250**: Large Data Visualization  
- **Credit Hours**: 3  
- **Class Time**: Tuesday 7:30 – 8:50 pm  
- **Class Location**: Frisco Hall – B127

IPAC students will follow the same content but will have somewhat modified assignments and requirements.

**Instructor Contact Information**

- Dr. LeAnn K. Boyce  
- **Office Hours**: by appointment  
- **Email**: leann.boyce@unt.edu

**Communication and Interaction with Instructor:**

Communication is essential for a successful semester!

I look forward to getting to know all of you and working with you. Contact me anytime using my UNT email (Leann.Boyce@unt.edu). I will check the email daily and will make every effort to respond as quickly as possible. If you have not heard back from me in 24 hours, please feel free to send another email. Here is a great website provided by CLEAR to give you some communication tips for communicating online: CLEAR has [a webpage for students that provides Online Communication Tips](http://www.clear.unt.edu/online-communication-tips) (Links to an external site.)

**About Your Professor**

Welcome to ADTA 5250: Large Data Visualization. I would like to share a little information about my background. I am an Assistant Clinical Professor in the Advanced Data Analytics Department at the Toulouse Graduate School. I have earned my Ph.D. and a master’s degree in Information Science with a focus on Health Informatics, a master’s degree in Advanced Data Analytics, and a master’s degree in Government from TWU. I joined UNT in the Fall of 2013 as a master’s student where I worked as a teaching assistant at UNT for 6 1/2 six years and as a Teaching Fellow for one year prior to my position as an adjunct professor for a year. Before my time here at UNT, I also was a teaching assistant/fellow at Texas Woman's University while earning a master's degree in government. I am excited to have you in class and I look forward to a successful semester.
Teaching Philosophy

I believe students must be given clear direction in order for them to succeed. It is important that they understand the course learning objectives as documented in the syllabus, and the deadlines for submission of all course work as documented on the course calendar. I have found that if a student understands the learning objectives and the contribution to their professional development of each assignment, the quality of their work improves. I also believe that students need to be given timely feedback so that they know how to improve and respond to communications from students in a timely manner. Timely feedback help students gain self-confidence and inspire them to fully engage in the course material and to believe that they can do well. It is important for students to know that as a professor, I understand that “life happens” and that I will be flexible when a legitimate problem arises. I also think that it is important to establish performance guidelines in the syllabus and to establish a safe and welcoming learning community in each course. It is my responsibility as a teacher to get my students ready for the workforce and to ensure that they are prepared to meet the professional challenges ahead.

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Required prerequisite courses: ADTA 5120 or consent of the instructor

Materials – Text, Readings, Supplementary Readings

No textbook is required for this course. These books are NOT required but you might find them beneficial for extra reinforcement of the material.


Course Description

This course presents strategies and methods for effective visualization and communication of data analyses. Tableau will be used to develop presentations that convey findings, answer business questions, drive decisions, and provide persuasive evidence supported by data. The course is targeted toward students interested in using visualization to understand data better and improve their analytics work.
Course Objectives

- Provide an overview and brief history of the practice of data visualization
- Introduce students to the key design principles and techniques for visualizing data
- Develop an understanding of the fundamentals of communication and alignment around the concepts that are required for effective data presentation
- Provide an overview and develop competency in the use of Tableau that can be used for data visualization
- Allow for project-based opportunities to identify, understand, analyze, prepare, and present effective visualizations on a variety of topics

Course Topics

- Introduction to Data Visualization
- Fundamental Concepts of Big Data
- Value of Data Visualization
- Introduction to Tableau
- Design & Best Practices
- Preparing Data in Tableau
- Exploratory Data Analysis (EDA)
- Data and Image Models & Properties of Images
- Multivariate Data Visualization
- Narrative Data Visualization
- Data Visualization: Graphs
- Data Visualization: Colors
- Tableau: Parameters & Filters
- Tableau: Dashboards
- PowerBI

COURSE REQUIREMENTS

- The student will be responsible for checking the announcements in the UNT email and other types of class communication daily.
- The student will access and follow all course instructions found in the syllabus, announcements, assignments, and all other class-related documents.
- The student will complete all the class assignments in the time frame specified in the class documents, including the course calendar to participate effectively in-class activities.

Assignments, Assessments, and Discussions

- There will be three discussion assignments (including a personal introduction). The student will respond to posted online course discussion questions each week following the instructions for discussion forums. Each student should submit his/her initial posts to respond to the discussion questions by the deadline provided in the
Course Calendar. Then he/she should continue by posting responses to his/her classmates’ posts throughout the week to maximize points earned each week. Students are encouraged to enhance the conversation by providing complimentary resource materials and properly referenced supplementary items.

- There will be twelve homework assignments throughout the course. Students are required to submit their homework on time.
- There is a quiz on plagiarism in Module 1 that must be completed with a 100% in order to move on to Module 2. Submitting the quiz indicates that you are aware of what constitutes plagiarism and the consequence associated with plagiarism. There is also a quick survey that will need to be completed so I can understand the experience of the class.
- There will be one midterm take-home exam. Students will submit the midterm exam by the deadline provided in the Course Calendar. No late submissions will be accepted without prior approval from the professor.
- There will be one final presentation.

Make-Up Policy
No make-up assignments or exams will be offered except for being approved in advance. Students will be required to provide the necessary documentation.

Late-work Policy
- All assignments are to be submitted by the due date and time.
- The deadline for submitting assignments (except final) is 11:59 PM on the due date.
- Late submissions can still be submitted up to 24 hours after the deadline and will be subject to a 25% penalty after the first and only extension. No submissions will be accepted later than 3 days after the deadline and NO late submission of the midterm or final.

NOTE: Late work is subject to the penalty described above unless previously approved by the instructor.

Academic Integrity Policy 06.003
- Policy Statement: The University of North Texas promotes the integrity of learning and embraces the core values of trust and honesty. Academic integrity is based on educational principles and procedures that protect the rights of all participants in the educational process and validate the legitimacy of degrees awarded by the University. In the investigation and resolution of allegations of student academic dishonesty, the University’s actions are intended to be corrective, educationally sound, fundamentally fair, and based on reliable evidence.
- Please understand that “Academic Misconduct,” in this policy, means the intentional or unintentional action by a student to engage in behavior in the academic setting
including, but not limited to cheating, fabrication, facilitating academic misconduct, forgery, plagiarism, and sabotage.

- Each student in my class can improve by doing their own work and trying their hardest. Students who use other people’s work with or without consent or without citations will be violating UNT’s Academic Integrity Policy. Please read and follow this important set of guidelines for your academic success (https://policy.unt.edu/policy/06-003). If you have questions about this or any UNT policy, please email me or come discuss this with me during my office hours.

Attendance Policy

- The student is responsible for regular and punctual attendance and is expected to participate in all courses in which the student is enrolled. Attendance will be taken during each class and will be factored into the final grade. If more than 3 classes are missed, there will be a deduction in the final grade.
- Students are required to participate in all class activities such as discussion boards, chat or conference sessions, and group projects. To learn more about campus resources and information on how you can achieve success, go to succeed.unt.edu

Virtual Classroom Citizenship
The same guidelines that apply to traditional classes should be observed in the virtual classroom environment (if needed). Please use proper netiquette when interacting with class members and the professor.

Class Schedule
The following is a tentative schedule. Should any change become necessary, it will be announced via the UNT email. It is the student’s responsibility to check for changes in the schedule.

<table>
<thead>
<tr>
<th>Module</th>
<th>Date: Due at 11:59 pm (Central Time) on the last day of the module, except for the final.</th>
<th>Topics</th>
<th>Homework</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug. 29 - Sept. 2</td>
<td>Welcome and Plagiarism</td>
<td>Plagiarism Quiz</td>
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<td></td>
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<td>Student Survey</td>
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<tr>
<td>Week</td>
<td>Dates</td>
<td>Topic</td>
<td>Assignment</td>
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<td>2</td>
<td>Sept. 3 - Sept. 9</td>
<td>Introduction to Data Visualization</td>
<td>Discussion: Personal Introduction</td>
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<td></td>
<td>Fundamental Concepts of Big Data</td>
<td>Data Visualization Journal: Part 1 Assignment</td>
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<tr>
<td>3</td>
<td>Sept. 10 - Sept. 16</td>
<td>Value of Data Visualization</td>
<td>Discussion 1</td>
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<td>4</td>
<td>Sept. 17 - Sept. 23</td>
<td>Introduction to Tableau</td>
<td>Installing Tableau and Why Data Visualization Assignment</td>
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<td>Data Visualization Journal: Part 2 Assignment</td>
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<td>5</td>
<td>Sept. 24 - Sept. 30</td>
<td>Preparing Data in Tableau</td>
<td>Tableau’s Data Prep Assignment</td>
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<td>Exploratory Data Analysis</td>
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<td>6</td>
<td>Oct. 1 - Oct. 7</td>
<td>Design and Best Practices</td>
<td>Create Bar, Line, and Heatmap Charts in Tableau Assignment</td>
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<td>8</td>
<td>Oct. 15 - Oct. 21</td>
<td>Multivariate Visualization</td>
<td>Data Visualization Journal: Part 3 Assignment</td>
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<td>Discussion 2</td>
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<td>9</td>
<td></td>
<td>Take-home Midterm (Oct. 22 - 28)</td>
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<tr>
<td>10</td>
<td>Oct. 29 - Nov. 4</td>
<td>Narrative Visualization</td>
<td>Data Visualization Journal: Part 4 Assignment</td>
</tr>
</tbody>
</table>
11  Nov. 5 - Nov. 11  Parameters and Filters in Tableau  Creating Parameters in Tableau Assignment

12  Nov. 12 - Nov. 18  Dashboards in Tableau  Creating a Dashboard Assignment
                 Data Visualization Journal: Part 5 Assignment

13  Thanksgiving Break

14  Nov. 26 - Dec. 2  PowerBI  PowerBI Visualizations Assignment

15  Dec. 3 - Dec. 9  Presentations

16  Dec. 10 - Dec. 16  Presentations

GRADING POLICY

The student’s grade in the course consists of the following components:

- **Homework Assignments:** 30%
- **Discussions** 10%
- **Midterm Exam:** 30%
- **Final Exam** 30%

The final letter grade will be determined as follows:

- A: 90 – 100 • B: 80 – 89 • C: 70 – 79 • D: 60 – 69 • F: < 60

Course Evaluation

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available from November 21 - December 8 to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (noreply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey, they will receive a confirmation email that the
survey has been submitted. For additional information, please visit the SPOT website or email spot@unt.edu.

**Access & Navigation**

**Access and Log in Information**

This course was developed and will be facilitated utilizing the University of North Texas’ resources. To be able to access the UNT systems, the student will need his/her EUID and password. If you do not know your EUID or have forgotten your password, please go to the website at [http://ams.unt.edu](http://ams.unt.edu).

**Technical Assistance**

Part of working in the online environment involves dealing with the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. Here at UNT, we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

UNT Help Desk: [UIT Student Help Desk site](http://www.unt.edu/helpdesk/index.htm)

- Email: helpdesk@unt.edu
- Phone: 940-565-2324
- In-Person: Sage Hall, Room 130
- Walk-In Availability: Call before coming to campus
- Telephone Availability:
  - Sunday: noon-midnight
  - Monday-Thursday: 8 am-midnight
  - Friday: 8am-8pm
  - Saturday: 9am-5pm

- Laptop Checkout: 8am-7pm
- For additional support, visit [Canvas Technical Help](https://community.canvaslms.com/docs/DOC-10554-4212710328)

**Scholarly Expectations**

All works submitted for credit must be original works created by the scholar uniquely for the class. It is considered inappropriate and unethical, particularly at the graduate level, to make duplicate submissions of a single work for credit in multiple classes, unless specifically requested by the instructor. Work submitted at the graduate level is expected to demonstrate higher-order thinking skills and be of significantly higher quality than work produced at the undergraduate level.

**Instructor Responsibilities and Feedback**
The instructor is responsible for responding to student questions about assignments and projects, about the course material presented, and for providing additional resources to enhance understanding of course material. Timely feedback is essential for student success and the instructor is responsible for providing timely feedback to students throughout the course. The instructor will grade submitted assignments and will post grades for students within 10 days of the assignment due date.

**Rules of Engagement**

Rules of engagement refer to the way students are expected to interact with each other and with their instructors. Here are some general guidelines:

- While the freedom to express yourself is a fundamental human right, any communication that utilizes cruel and derogatory language on the basis of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal, or state law will not be tolerated.
- Treat your instructor and classmates with respect in any communication online or face-to-face, even when their opinion differs from your own.
- Ask for and use the correct name and pronouns for your instructor and classmates.
- Speak from personal experiences. Use “I” statements to share thoughts and feelings. Try not to speak on behalf of groups or other individuals’ experiences.
- Use your critical thinking skills to challenge other people’s ideas, instead of attacking individuals.
- Avoid using all caps while communicating digitally. This may be interpreted as “YELLING!”
- Be cautious when using humor or sarcasm in emails or discussion posts as tone can be difficult to interpret digitally.
- Avoid using “text-talk” unless explicitly permitted by your instructor.
- Proofread and fact-check your sources.
- Keep in mind that online posts can be permanent, so think first before you type. See these [Engagement Guidelines](https://clear.unt.edu/online-communication-tips) for more information.

**Incompletes**

This course will observe the [UNT policy on incompletes](http://registrar.unt.edu/grades/incompletes), found here: http://registrar.unt.edu/grades/incompletes

**Policy on Server Unavailability or Other Technical Difficulties**

The University is committed to providing a reliable online course system to all users. However, in the event of an unexpected server outage or any unusual technical difficulty which prevents students from completing a time-sensitive assessment activity, the instructor will extend the time windows and provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the UNT Student Help Desk: helpdesk@unt.edu or 940.565.2324. The
instructor and the UNT Student Help Desk will work with the student to resolve any issues at the earliest possible time.

**Copyright Notice**
Some or all of the materials on this course Web site may be protected by copyright. Federal copyright law prohibits the reproduction, distribution, public performance, or public display of copyrighted materials without the express and written permission of the copyright owner unless fair use or another exemption under copyright law applies. Additional copyright information may be located at [http://copyright.unt.edu](http://copyright.unt.edu).

**Administrative Withdrawal**
This course will observe the UNT policy on academic withdrawal found here: [https://deanofstudents.unt.edu/withdrawals](https://deanofstudents.unt.edu/withdrawals)

**Syllabus Change Policy**
Changes to the course syllabus or due dates are not anticipated but should they be necessary, the instructor will provide ample notification to students to allow them to complete assignments in a timely manner without penalty.

**UNT GENERAL POLICIES**

*Student Conduct and Discipline: Student Handbook.*
You are encouraged to become familiar with the University's Policy of Academic dishonesty found in the Student Handbook. The content of the Handbook applies to this course. If you are in doubt regarding the requirements, please consult with me before you complete any requirements of the course.

*The UNT Code of Student Conduct can be found here:*

**ADA Policy**
The University of North Texas makes reasonable academic accommodations for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to the faculty to begin a private discussion regarding your specific needs in a course. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability.
Accommodation website at [http://disability.unt.edu/](http://disability.unt.edu/). You may also contact them by phone at 940.565.4323.

**Add/Drop Policy**
The University of North Texas Add Drop Policy can be found at the following link: [http://registrar.unt.edu/registration/fall-add-drop](http://registrar.unt.edu/registration/fall-add-drop)

**Important Notice for F-1 Students taking Distance Education Courses:**

**Federal Regulation**

The paragraph reads:

(G) For F–1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken online or through distance education and does not require the student’s physical attendance for classes, examination or other purposes integral to the completion of the class.

**University of North Texas Compliance**
To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experiences integral to the completion of this course. If such an on-campus activity is required, it is the student’s responsibility to do the following: (1) Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course. (2) Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose. Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.

**Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)**
The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

Emergency Notification & Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

Sexual Assault Prevention

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT’s Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim’s compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off-campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Student Verification

UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying students of any special meeting times/locations or additional charges associated with student identity verification in distance education courses.

See UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses (https://policy.unt.edu/policy/07-002).
**ACADEMIC SUPPORT & STUDENT SERVICES**

**Student Support Services**

**Mental Health**

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- [Student Health and Wellness Center](https://studentaffairs.unt.edu/student-health-andwellness-center)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testingservices)
- [UNT Care Team](https://studentaffairs.unt.edu/care)
- [UNT Psychiatric Services](https://studentaffairs.unt.edu/student-health-and-wellnesscenter/services/psychiatry)
- [Individual Counseling](https://studentaffairs.unt.edu/counseling-and-testingservices/services/individual-counseling)

**Chosen Names**

A chosen name is a name that a person goes by that may or may not match their legal name. If you have a chosen name that is different from your legal name and would like that to be used in class, please let the instructor know. Below is a list of resources for updating your chosen name at UNT.

- [UNT Records](https://studentaffairs.unt.edu/)
- [UNT ID Card](https://studentaffairs.unt.edu/)
- [UNT Email Address](https://studentaffairs.unt.edu/)
- [Legal Name](https://studentaffairs.unt.edu/)

*UNT EUIDs cannot be changed at this time. The collaborating offices are working on a process to make this option accessible to UNT community members.*

**Pronouns**

Pronouns (she/her, they/them, he/him, etc.) are a public way for people to address you, much like your name, and can be shared with a name when making an introduction, both virtually and in person. Just as we ask and don’t assume someone’s name, we should also ask and not assume someone’s pronouns.
You can add your pronouns to your Canvas account so that they follow your name when posting to discussion boards, submitting assignments, etc.

Below is a list of additional resources regarding pronouns and their usage:

- What are pronouns and why are they important?
- How do I use pronouns?
- How do I share my pronouns?
- How do I ask for another person’s pronouns?
- How do I correct myself or others when the wrong pronoun is used?

Additional Student Support Services

- Registrar (https://registrar.unt.edu/registration)
- Financial Aid (https://financialaid.unt.edu/)
- Student Legal Services (https://studentaffairs.unt.edu/student-legal-services)
- Career Center (https://studentaffairs.unt.edu/career-center)
- Multicultural Center (https://edo.unt.edu/multicultural-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testingservices)
- Pride Alliance (https://edo.unt.edu/pridealliance)
- UNT Food Pantry (https://deanofstudents.unt.edu/resources/food-pantry)

Academic Support Services

- Academic Resource Center (https://clear.unt.edu/canvas/student-resources)
- Academic Success Center (https://success.unt.edu/asc)
- UNT Libraries (https://library.unt.edu/)
- Writing Lab (http://writingcenter.unt.edu/)