Course Information

ADTA 5100 – Fundamentals of Data Analytics
Summer 2020 – 8W1 (May 11 – July 3, 2020)
Class Meeting Time/Location – 100% online, no in-person class meetings required
Optional video Zoom session — Wednesdays at 7:00 pm

Instructor Contact

Denise R Philpot, PhD, MBA
Office hours: times by appointment
Denise.Philpot@unt.edu

About the Professor / Instructor

Welcome to ADTA 5100 Fundamentals of Data Analytics. I am Dr. Denise Philpot, the instructor for this course and the Advanced Data Analytics program advisor. Prior to earning my doctoral degree in Applied Technology and Performance Improvement with a minor in Management Science, I was a systems analyst/customer account manager for Xerox Corporation. While teaching high school business courses I earned my MBA in Organizational Behavior/Human Resource Management. Like many of my students, I have not followed the traditional academic path. The variety of career and academic experiences that we all have provide the foundation for interesting course discussions.

I am excited to have you in this course and look forward to learning more about you and your career goals. Together we will explore a variety of statistical analysis tools, learn about how and when to use them, interpret the outputs of the analysis, and describe the results in ways that will help us or others take appropriate actions to achieve the desired outcomes or goals. Together we will do great things!

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

There are no prerequisites for this course. Students should be comfortable with technology and standard business applications such as Microsoft Word and Excel.

Required Materials

One textbook is required for this course. Other supplemental materials will be provided via a link to the UNT Willis Library website or included in the Module folders on Canvas. Students will also need to have access to Microsoft Excel for data analysis assignments.
Suggested Materials

Microsoft Excel 2016: Data Analysis and Business Modeling (2016)
By Wayne L. Winston
Published by Microsoft Press, Redmond, Washington

Course Description

This course introduces students to basic statistical techniques and the fundamental concepts data management. Students will use familiar tools to prepare data for analysis and practice techniques associated with exploratory data analysis, interpretation of results, and provide explanations regarding the significance of their analysis. The knowledge and skills gained in this course prepare students for advanced analytics and programming courses.

Course Objectives

By the end of the course, students should be able to:
1. Learn data management functions in Excel to prepare data for analysis
2. Use pivot tables to analyze categorical data
3. Calculate and interpret descriptive statistics using Excel and produce appropriate charts.
4. Calculate and interpret probability statistics
5. Calculate, interpret, and explain z-scores and t-tests
6. Use statistics to answer a research question or problem statement

Course Topics

1. Which statistical techniques to use and when
2. Distributions and what they mean/how they impact analysis techniques
3. The importance of sample size and sampling methodology
4. Probability and what it means
5. Using Excel to conduct basic statistical analysis using the Analytics ToolPak
6. Creating Pivot Tables to analyze categorical data
7. Creating a variety of graphics used to visually represent data including boxplots, scatter diagrams, and histograms
8. Translation of statistical output into common language that is easily understood

Teaching Philosophy

It is my goal to create a learning environment in which students feel respected, are engaged in the activities, and bring their questions, experiences, and ideas to the classroom. For real learning to occur, we must work together to achieve a common goal: mastery of the curriculum and the ability to apply what is learned to future activities both in and out of the classroom. In support of the learning objective, I commit to you, to be fully engaged in the classroom, to be available outside of the classroom, and to share my knowledge and experiences with you to enhance the learning process. I believe that learning should be fun (not necessarily easy or without hard work) and that I can learn from you, too. I expect each student to work at their full capacity, respect others, and participate in the classroom so that their experiences can add to the overall learning experience. Lifelong learning is the foundation of my commitment to you for ensuring that the ideas, concepts, theories, and practices I bring to the classroom are current, relevant, and of value to you.

TECHNICAL REQUIREMENTS / ASSISTANCE

Access and Log in Information

This course was developed and will be facilitated utilizing the CANVAS Learning Management System. To get started with the course, please go to:  https://unt.instructure.com/login/ldap

You can access student guides on Canvas at this site. You will need your EUID and password to log in to the course. If you do not know your EUID or have forgotten your password, please go to: https://ams.unt.edu/

The Canvas Student app has a mobile version of Canvas that helps students stay current with their courses anywhere. Download the Canvas Student app on Android and iOS devices.

For iOS devices, see: How do I download the Canvas Student app on my iOS device? https://community.canvaslms.com/docs/DOC-9831-18561185379

For Android devices, see: How do I download the Canvas Student app on my Android device? https://community.canvaslms.com/docs/DOC-9758-18555199445

Student Academic Support Services

Links to all these services can be found on the Online Student Resources tab within the Canvas Help function.

- Academic Resource Center: buy textbooks and supplies, access academic catalogs and programs, register for classes, and more.
- Center for Student Rights and Responsibilities: provides Code of Student Conduct along with other useful links.
• Office of Disability Accommodation: ODA exist to prevent discrimination on the basis of
disability and to help students reach a higher level of independence.  
https://disability.unt.edu/

• Counseling and Testing Services: CTS provides counseling services to the UNT
community as well as testing services; such as admissions testing, computer-based
testing, career testing and other tests.  http://studentaffairs.unt.edu/counseling-and-testing-
services

• UNT Libraries: online library services http://www.library.unt.edu/services

• Online Tutoring: chat in real time, mark up your paper using drawing tools and edit the text
of your paper with the tutor’s help.

• The Learning Center Support Programs: various program links provided to enhance the
student experience.  https://learningcenter.unt.edu/

• Supplemental Instruction: program for every student, not just for students that are
struggling.

• UNT Writing Lab: offers free writing tutoring to all UNT students, undergraduate and
graduate.  http://writingcenter.unt.edu/

• Math Tutor Lab: http://math.unt.edu/mathlab/

• Succeed at UNT: how to be a successful student information.  https://success.unt.edu/

The following information is provided to assist you in preparation for the technological aspect of the
course.

UIT Help Desk: http://it.unt.edu/help-desk-resources-students

Browser requirements: You need a browser that interfaces well with Canvas, such as
Microsoft Internet Explorer or Mozilla Firefox.  
https://clear.unt.edu/supported-technologies/canvas/requirements

Word Processor
Creating and submitting files in Microsoft Office, the standard software for this course.

STUDENT TECHNICAL SUPPORT

The University of North Texas UIT Student Helpdesk provides student technical support in the
use of Canvas and supported resources. The student help desk may be reached at:
Email: helpdesk@unt.edu  Phone: 940.565-2324
In Person: Sage Hall, Room 130
Our hours are: (These might be slightly different during the summer.)
• Monday-Thursday 8am-midnight
• Friday 8am-8pm
• Saturday 9am-5pm
• Sunday 8am-midnight
Technical Skill Requirements

Students should be able to upload and download files, perform data analysis using Microsoft Excel, and access the Internet for course support materials. Effective navigation of Canvas is necessary as course assignments and support materials will be made available through this application. Email will be used to communicate to students via the UNT provided student email accounts.

Netiquette

Student behavior that interferes with an instructor’s ability to conduct a class or other students’ opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. This includes but is not limited to comments made on discussion boards or other unacceptable communications between students in an online or blended learning environment. Inappropriate behaviors will be handled based upon the UNT Student Conduct and Discipline Policy which can be found at deanofstudents.unt.edu/conduct.

For those students that are new to online learning or assignments on a Learning Management System like Canvas, you may find these guidelines developed by Albion and Seth T. Ross to be very helpful.


Course Requirements

Your final grade will be determined based on weekly analysis assignments, in-depth research projects and class participation: Class participation 20%; weekly analysis assignments 30%; research project phase 1 20%; and, the final research project/presentation 30%. The total number of points received will be divided by the total possible number of points.

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<thead>
<tr>
<th>Assignments</th>
<th>Points Possible</th>
<th>Percentage of Final Grade</th>
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<tbody>
<tr>
<td>Class Participation</td>
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<tr>
<td>• 3 discussion board assignments @ 40 points each</td>
<td>210 points</td>
<td>20%</td>
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<tr>
<td>• 3 journal assignments @ 30 points each</td>
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<tr>
<td>Weekly Assignments</td>
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<tr>
<td>• 7 quizzes @ 25 points each</td>
<td>650 points</td>
<td>66%</td>
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<td>• 6 homework – 75 points for most; 100 for module 6</td>
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<tr>
<td>Individual Data Analytics Research Project</td>
<td>140 points</td>
<td>14%</td>
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<tr>
<td>Total Points Possible</td>
<td>1025 points</td>
<td>100%</td>
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Grading

Course grades will be assigned based on this percentage with a standard 10-point grading scale (100% – 90%, A; 89% – 80%, B; 79% – 70%, C; 69% – 60%, D; 59% – 0%, F).
Course Assignment, Examination, and or Project Policies

Final Course Project

Each student will be provided a data file to be used for the final course project. You will complete the defined tasks which will include some data clean-up and analysis. Details for this assignment will be contained in the Final Project folder in our Canvas course. A rubric will be provided along with suggestions and links to resources. The final project is due at the end of the course. Each student will submit a final course project paper that describes the process they used to complete the assigned tasks, translate their data analysis into descriptive text, and interpret the analysis they conduct and confidence intervals they generate using the data set provided. The project is worth 140 points. It is expected that the paper be free from grammatical errors. The minimum requirement for the paper will be 3 pages of content, double-spaced, 1-inch margins, using Arial or Times Roman 12 point font. The submitted paper and Excel file should also include a separate cover page that includes your name and the title of your paper. You are not required to include an abstract for this paper. The paper is due on the Friday of the final week of the course at 5:00 pm CST. Late papers will not be accepted. The paper will be submitted for grading via software that checks for plagiarism. Plagiarism is a violation of the Student Code of Conduct and will be handled per university policy.

Discussion Boards (40 points each)
There will be three discussion board assignments. Each discussion board forum will focus on a question related to the textbook reading or supplemental readings that will be posted to Canvas. To earn full points on discussion boards, students must be actively engaged in the group discussion and provide input to each of the assigned questions. As graduate students, it is expected that your responses be thoughtful, respectful, grammatically correct, and show your understanding of the topic being discussed.

Journals (30 points each)
There will be three journal assignments. These are reflective in nature and are designed for you to share your thoughts and experiences related to the topic presented. There will be pre-reading assigned with each journal assignment that will be provided by your professor or come from the textbook. As graduate students, it is expected that your responses be thoughtful, grammatically correct, and show your understanding of the topic being discussed. Journal assignments are not seen by your peers and do not require responses to their entries.

Chapter Quizzes
There will be weekly quizzes. Quizzes will be worth 25 points each and may be taken up to two (2) times with the highest earned grade counted toward your point total. The quizzes will be multiple questions designed to reinforce the textbook/lecture content. Quizzes need to be completed by the due date. Quizzes will be due as indicated on the course schedule. Times listed are Central Standard Time

Homework Assignments
There will be six (6) homework assignments given during the course that are related to material covered in the chapters. Assignments may include questions to be answered about a specific concept, analysis using provided data sets, interpretation of the results of the analysis, or questions related to the course material and how it was used or misused in a recent news story. There will be an assignment submission link provided in the appropriate folder for all homework
assignments. Written responses are expected to be free of grammatical errors. Data analysis should include a brief discussion of the steps you used to complete the analysis.

Course Expectations
It is my goal to create a learning environment in which students feel respected, are engaged in the activities, and bring their questions, experiences, and ideas to the classroom. For real learning to occur, we must work together to achieve a common goal: mastery of the curriculum and the ability to apply what is learned to future activities both in and out of the classroom. In support of the learning objective, I commit to you, to be fully engaged in the classroom, to be available outside of the classroom, and to share my knowledge and experiences with you to enhance the learning process. I believe that learning should be fun (not necessarily easy or without hard work) and that I can learn from you, too. I expect each student to work at their full capacity, respect others, and participate in the classroom so that their experiences can add to the overall learning experience. Lifelong learning is the foundation of my commitment to you for ensuring that the ideas, concepts, theories and practices I bring to the classroom are current, relevant, and of value to you.

Policies
Assignment Policy / Late Work
All work for this course is due no later than 11:59 pm on the designated due. Any assignment submitted after that time will receive a highest possible score of 60%. Additional points may be deducted when the assignment is graded based on the quality of the work submitted. Please don’t lose valuable points this semester by turning in work late.

**Late work is subject to penalty described above unless previously approved by the instructor**

Instructor Responsibilities and Feedback
• As the instructor, it is my responsibility to help students grow and learn; provide clear instructions for projects and assessments, answer questions about assignments, identify additional resources as necessary, provide rubrics, and continually review and update course content based upon learning outcomes and changes in the field of study.
• Feedback on assignments will be provided in a timely manner. Students can expect responses to emails within 24 hours. Grades for weekly assignments will be posted the following week. Project grades will be posted as they are completed.

Turnitin Notice
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. Turnitin is used as a tool to assist students in their scholarly writing to address plagiarism issues. It is recommended that students use this resource to ensure their work is free of copyright issues prior to final submission of their projects.
Class Participation
Students are required to login regularly to the online class site. The instructor will use the tracking feature in Canvas to monitor student activity. Students are also required to participate in all class activities such as discussion board, chat or conference sessions and group projects.

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

Incompletes
Incompletes will only be given per university policy.

http://registrar.unt.edu/grades/incompletes

UNT POLICIES
Student Conduct and Discipline:
You are encouraged to become familiar with the University's Code of Student Conduct and the Policy of Academic Integrity found on the Dean of Students website. The policies contained on this website apply to this course. If you have questions regarding any of the information presented regarding academic integrity, please feel free to contact me. I will be happy to review any of your work prior to final submission for grading.

The UNT Code of Student Conduct can be found here:
http://deanofstudents.unt.edu/conduct

The UNT policy regarding Academic Integrity can be found here:
http://policy.unt.edu/policy/06-003

ADA Policy
The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable 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 a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time, however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable 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 reasonable 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://www.unt.edu/oda. You may also contact them by phone at 940.565.4323.

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.

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation

To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the Electronic Code of Federal Regulations website at http://ecfr.gpoaccess.gov. The specific portion concerning distance education courses is located at "Title 8 CFR 214.2 Paragraph (f)(6)(i)(G)" and can be found buried within this document: http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=8&PART=214&SECTION=2&TYPETEXT

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 on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F–1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

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 experience 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.
## Course Calendar – Summer 8W1 2019

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<tr>
<th>Week</th>
<th>Date</th>
<th>Topic / Required Reading</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>May 11</td>
<td>Course overview and Syllabus review</td>
<td>Complete Introduction Assignment – Discussion Board #1 – Read assigned articles Complete Quiz Complete assessment All assignments due May 17</td>
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<td>Module 1 – Data Preparation</td>
<td>Watch video tutorial</td>
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<td>Read the assigned reading on our Canvas course, Module 1</td>
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<td>Watch Excel tutorials</td>
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<tr>
<td>Week 2</td>
<td>May 18</td>
<td>Module 2 – Let’s do it! Data Preparation with Excel Using Excel to prepare your data</td>
<td>Watch tutorials Complete Discussion Board Complete Quiz Complete Assessment All assignments due May 24</td>
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<td>Read Excel tutorials</td>
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<td>Week 3</td>
<td>May 25</td>
<td>Module 3 – Introduction to Basic Statistics Read Chapter 1: Introduction to Statistics and</td>
<td>Read Chapters Complete Quiz Complete Assessment All assignments due May 31</td>
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<td>Frequency Distributions and Chapter 2: Central Tendency</td>
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<td>Week 4</td>
<td>June 1</td>
<td>Module 4 – Variability and z Scores Read Chapter 3: Variability and Chapter 4: z Scores</td>
<td>Read Chapter Complete Quiz Complete Assessment All assignments due June 7</td>
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<td>Week</td>
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<td>Week 5</td>
<td><strong>Module 5 – Everything You Want to Know About Samples</strong></td>
<td>Read the Chapter</td>
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<td>June 8</td>
<td>Read Chapter 5: The Distribution of Sample Means and Z for a Sample Mean</td>
<td>Complete the Quiz</td>
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<td>Complete Journal assignment</td>
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<td>Complete Assessment</td>
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<td><strong>All Assignments due June 14</strong></td>
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<td>Week 6</td>
<td><strong>Module 6 – Reject or Fail to Reject – Using z scores to answer questions</strong></td>
<td>Read Chapter</td>
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<td>June 15</td>
<td>Read Chapter 6: Hypothesis Testing with z scores</td>
<td>Complete Quiz</td>
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<td>Complete Assessment</td>
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<td><strong>All Assignments due June 21</strong></td>
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<tr>
<td>Week 7</td>
<td><strong>Module 7 – Estimating with Confidence</strong></td>
<td>Read Chapter</td>
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<td>June 22</td>
<td>Read Chapter 8: Estimation with Confidence Intervals</td>
<td>Take Quiz</td>
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<td>Complete Assessment</td>
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<td><strong>All Assignments due June 28</strong></td>
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<tr>
<td>Week 8</td>
<td><strong>“Final Exam Week”</strong></td>
<td>Data Analytics Project</td>
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<tr>
<td>June 29</td>
<td>Project Paper</td>
<td>Complete Journal #4</td>
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<td>Complete Reflection Journal</td>
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<td><strong>All Assignments due July 3</strong></td>
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