

CIS 3306-115, 60251, Data Visualization

Summer 2022

Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION

Course Dates: Jun 6, 2022 – Jul 29, 2022

Modality: This is a 100% online course. The lecture recordings will be provided via Canvas. The supplemental materials will also be made available online through the A&M-Central Texas Canvas Learning Management System [<https://tamuct.instructure.com/>].

Location: Online via Canvas

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Khaldoon Dhou, PhD

Office: FH 323

Phone: (254) 519-5437

Email: kdhou@tamuct.edu

Office Hours

My office hours will be on Monday and Tuesday from 8 AM to 11 AM. Because of the pandemic, I will hold my office hours virtually. You can email me and we can meet using Zoom, Skype, phone, or any way. If there is a need to meet face-to-face, please email me to arrange it. Please feel free to email me at anytime if you need any help. In other words, you are not limited to my office hours and you can always seek help.

Student-instructor interaction

I should respond to your emails within 24-48 hours and I do my best to answer very quickly. You can also email me to arrange an appointment with me. Because of the pandemic, I prefer to meet virtually, but I understand that there are times when a student needs to meet in person. So, I am open to either way while using a facial mask and maintaining a social distance in face-to-face meetings.

Emergency Warning System for Texas A&M University-Central Texas

SAFEZONE. SafeZone provides a public safety application that gives you the ability to call for help with the push of a button. It also provides Texas A&M University-Central Texas the ability to communicate emergency information quickly via push notifications, email, and text messages. All students automatically receive email and text messages via their myCT accounts.

Downloading SafeZone allows access to push notifications and enables you to connect directly for help through the app.

You can download SafeZone from the app store and use your myCT credentials to log in. If you would like more information, you can visit the [SafeZone](http://www.safezoneapp.com) website [www.safezoneapp.com].

To register SafeZone on your phone, please follow these 3 easy steps:

1. Download the SafeZone App from your phone store using the link below:
 - [iPhone/iPad](https://apps.apple.com/app/safezone/id533054756): [https://apps.apple.com/app/safezone/id533054756]
 - [Android Phone / Tablet](https://play.google.com/store/apps/details?id=com.criticalarc.safezoneapp)
[https://play.google.com/store/apps/details?id=com.criticalarc.safezoneapp]
2. Launch the app and enter your myCT email address (e.g. {name}@tamuct.edu)
3. Complete your profile and accept the terms of service

COURSE INFORMATION

Course Overview and description

Data visualization makes it easier to understand the data. The goal of this course is to introduce students to data visualization including both the principles and techniques. Students will learn the value of visualization, specific techniques in data visualization and will understand how to best leverage visualization methods. The course will focus on fundamental concepts and best practices for effective communication with data.

Course Objective or Goal

Student Learning Outcomes

Successful completion of this course should enable student to:

- Choose an appropriate visual display depending on the context for visualizing data
- Understand and describe Gestalt principles of visual perception
- How to use preattentive attributes in data visualization
- Explore affordances, accessibility and aesthetics in the context of visualizing data
- Use R's default graphics for exploring and visualizing data
- Create a variety of bar graphs, line graphs, and scatter plots
- Summarize data distributions with histograms, density curves, and box plots
- Provide annotations to help viewers interpret data
- Control the overall appearance of graphs

Competency Goals Statements (certification or standards)

NA

Required Reading and Textbook(s)

Data Visualization: Exploring and Explaining with Data | 1st Edition

By Jeffrey D. Camm, James J. Cochran, Michael J. Fry, Jeffrey W. Ohlmann

Publisher: Cengage

ISBN13: 978-0-357-63134-8

Note: A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer

Suggested material

Title: Tableau Prep Cookbook

Author: Hendrik Kleine

Publisher: Packt Publishing

ISBN-13: 978-1800563766

Title: Mastering Tableau 2021: Implement advanced business intelligence techniques and analytics with Tableau

Author: Marleen Meier, David Baldwin, and Kate Strachnyi

Publisher: Packt Publishing

Edition: 3rd Edition

ISBN-13: 978-1800561649

Title: The Tableau Workshop

Authors: Sumit Gupta, Sylvester Pinto, Shweta Sankhe-Savale, JC Gillet, Kenneth Michael Cherven

Publisher: Packt Publishing

ISBN: 9781800207653

Title: The Complete Tableau Bootcamp for Aspiring Data Scientists [Video]

Author: Vivek P.

Publisher: Packt Publishing

ISBN-13: 9781801075800

Title: Learn Tableau and Ace the Tableau Certified Data Analyst Exam [Video]

Author: Vivek P.

Publisher: Packt Publishing

ISBN-13: 9781801813235

COURSE REQUIREMENTS

Exams: There will be two exams: midterm and final. Each is worth 15 points (15%). Details about the midterm and final exams will be provided to you in the class

Assignments: During the semester, you will get different assignments that measure your understanding to the material and help you gain programming skills. Multiple submissions before the deadline are allowed. You need to zip the files before submission if the assignment has multiple files. Before you submit any assignment, run it on your computer and make sure it works. In addition, you need to submit a screenshot to prove that your code works. Assignments are worth 35 points (35%)

Discussions: There will see many graded discussions that are worth 20 points (20%). The purpose of these discussions is to stimulate your thinking of the material presented in the class and to help you connect and learn from other students.

Grading Criteria Rubric and Conversion

The final grade for the course will be based upon the following:

Item	Points	Percentage
Exams	30	30%
Assignments	50	50%
Discussions	20	20%
Total	100	100%

Grade	Percentage
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	0-59%

Posting of Grades

All student grades will be posted on the Canvas Grade Book and students should monitor their grading status through this tool. Grades will be posted within 7 days after of the due date

Grading Policies

I do not accept late work. However, I firmly believe that there are situations where a student cannot submit the work on time (i.e. sickness). If you believe you have a legitimate reason that did not allow you to finish the work and submit it by the deadline, please come and talk to me and depending on the situation, I can make an exception for you to make up the work. I always advise students to start working on the assignments as soon as they get them.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar

Below is a tentative schedule that is subject to change by instructor

Weeks	Topics	Assignments Due
Week 1 Jun 6 – Jun 12	Syllabus Introduction to visualization	Assignment 1
Week 2 Jun 13 – Jun 19	Selecting a Chart Type Data Visualization and Design	Discussion 1 Assignment 2
Week 3 Jun 20 – Jun 26	Purposeful Use of Color	Assignment 3
Week 4 Jun 27 – Jul 3	Visualizing Variability	Midterm
Week 5 Jul 4 – Jul 10	Exploring Data Visually	Assignment 4 Discussion 2

Week 6 Jul 11 – Jul 17	Explaining Visually to Influence with Data	Assignment 5
Week 7 Jul 18 – Jul 24	Data Dashboards	Assignment 6 Discussion 3
Week 8 Jul 25 – Jul 29	Telling the Truth with Data Visualization	Final Exam

Important University Dates

Date	Description
June 6, 2022	Add, Drop, and Late Registration Begins for 10-, 8- and First 5-Week Classes. \$25 Fee assessed for late registrants
June 6, 2022	Classes Begin for First 5-, 10-, and 8-Week Summer Session
June 9, 2022	Deadline to Drop First 5-Week Classes with No Record
June 13, 2022	Deadline to Drop 8-Week Classes with No Record
June 21, 2022	Deadline to Drop 10-Week Classes with No Record
June 24, 2022	Deadline to Drop First 5-Week Classes with a Quit (Q) or Withdraw (W)
July 1, 2022	Deadline for Summer Graduation Application
July 1, 2022	Deadline for School Counselor Program Applications
July 4, 2022	Independence Day (University Closed)
July 8, 2022	Classes End for First 5-Week Session
July 8, 2022	Deadline to Withdraw from the University for First 5-Week Classes
July 11, 2022	Add, Drop, and Late Registration Begins for Second 5-Week Classes. \$25 Fee assessed for late registrants
July 11, 2022	Classes Begin Second 5-Week Summer Session
July 12, 2022	Deadline for Faculty Submission of First 5-Week Final Class Grades (due by 3pm)
July 14, 2022	Deadline to Drop Second 5-Week Classes with No Record
July 23, 2022	Deadline for Final Committee-Edited Theses with Committee Approval Signatures for Summer Semester to Graduate School Office
July 22, 2022	Deadline to Drop 10-Week Classes with a Quit (Q) or Withdraw (W)
July 29, 2022	Classes End for 8-Week Session
July 29, 2022	Deadline to Drop Second 5-Week Classes with a Quit

	(Q) or Withdraw (W)
July 29, 2022	Deadline to Withdraw from the University for 8 -Week Classes
August 1, 2022	Deadline for GRE/GMAT Scores to Graduate School Office
August 2, 2022	Deadline for Faculty Submission of 8-Week Final Class Grades (due by 3pm)

TECHNOLOGY REQUIREMENTS AND SUPPORT

Technology Requirements

This course will use the A&M-Central Texas Instructure Canvas learning management system. **We strongly recommend the latest versions of Chrome or Firefox browsers. Canvas no longer supports any version of Internet Explorer.**

Logon to A&M-Central Texas Canvas [<https://tamuct.instructure.com/>] or access Canvas through the TAMUCT Online link in myCT [<https://tamuct.onecampus.com/>]. You will log in through our Microsoft portal.

Username: Your MyCT email address. Password: Your MyCT password

Canvas Support

Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select “Chat with Canvas Support,” submit a support request through “Report a Problem,” or call the Canvas support line: 1-844-757-0953.

For issues related to course content and requirements, contact your instructor.

Online Proctored Testing

A&M-Central Texas uses Proctorio for online identity verification and proctored testing. This service is provided at no direct cost to students. If the course requires identity verification or proctored testing, the technology requirements are: Any computer meeting the minimum computing requirements, plus web camera, speaker, and microphone (or headset). Proctorio also requires the Chrome web browser with their custom plug in.

Other Technology Support

For log-in problems, students should contact Help Desk Central, 24 hours a day, 7 days a week

Email: helpdesk@tamu.edu

Phone: (254) 519-5466

[Web Chat](http://hdc.tamu.edu): [<http://hdc.tamu.edu>]

Please let the support technician know you are an A&M-Central Texas student.

UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Drop Policy

If you discover that you need to drop this class, you must complete the [Drop Request](#) Dynamic Form through Warrior Web.

[<https://federation.ngwebsolutions.com/sp/startSSO.ping?PartnerIdpid=https://eis-prod.ec.tamuct.edu:443/samlSso&SpSessionAuthnAdapterId=tamuctDF&TargetResource=https%3a%2f%2fdynamicforms.ngwebsolutions.com%2fSubmit%2fStart%2f53b8369e-0502-4f36-be43-f02a4202f612>].

Faculty cannot drop students; this is always the responsibility of the student. The Registrar's Office will provide a deadline on the Academic Calendar for which the form must be completed. Once you submit the completed form to the Registrar's Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar's Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

Academic Integrity

Texas A&M University-Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. All academic misconduct concerns will be referred to the Office of Student Conduct. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

For more [information regarding the Student Conduct process](#), [<https://www.tamuct.edu/student-affairs/student-conduct.html>].

If you know of potential honor violations by other students, you may [submit a report](#), [https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=0].

Academic Accommodations

At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier-free education. The Warrior Center for Student Success, Equity and Inclusion is responsible for ensuring that students with a disability receive equal access to the university's programs, services and activities. If you believe you have a disability requiring reasonable accommodations, please contact the Office of Access and Inclusion, WH-212; or call (254) 501-5836. Any information you provide is private and confidential and will be treated as such.

For more information, please visit our [Access & Inclusion](#) Canvas page (log-in required) [<https://tamuct.instructure.com/courses/717>]

Important information for Pregnant and/or Parenting Students

Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and related guidance from US Department of Education's Office of Civil Rights, the Dean of Student Affairs' Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. Students should seek out assistance as early in the pregnancy as possible. For more information, please visit [Student Affairs](https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html) [https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html]. Students may also contact the institution's Title IX Coordinator. If you would like to read more about these [requirements and guidelines](#) online, please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender—including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Associate Dean in the Division of Student Affairs at (254) 501-5909 to seek out assistance. Students may also contact the University's Title IX Coordinator.

Tutoring

Tutoring is available to all A&M-Central Texas students, both virtually and in-person. Student success coaching is available online upon request.

If you have a question, are interested in becoming a tutor, or in need of success coaching contact the Warrior Center for Student Success, Equity and Inclusion at (254) 501-5836, visit the Warrior Center at 212 Warrior Hall, or by emailing WarriorCenter@tamuct.edu.

To schedule tutoring sessions and view tutor availability, please visit [Tutor Matching Services](https://tutormatchingservice.com/TAMUCT) [https://tutormatchingservice.com/TAMUCT] or visit the Tutoring Center in 111 Warrior Hall.

Chat live with a remote tutor 24/7 for almost any subject from on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log in and receive online tutoring support at no additional cost. This tool provides tutoring in over 40 subject areas except writing support. Access Tutor.com through Canvas.

University Writing Center

Located in Warrior Hall 416, the University Writing Center (UWC) at Texas A&M University–Central Texas (A&M–Central Texas) is a free service open to all A&M–Central Texas students. For the Summer 2022 semester, the hours of operation are from 10:00 a.m.-4:00 p.m. Monday thru Thursday in Warrior Hall 416 (with online tutoring available every hour as well) with satellite hours available online only Monday thru Thursday from 6:00-9:00 p.m. and most Saturdays from 12:00-3:00 p.m.

Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students' ideas and writing,

our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the UWC is here to help!

Students may arrange a one-to-one session with a trained and experienced writing tutor by making an appointment via [WCOOnline](https://tamuct.mywconline.com/) at [https://tamuct.mywconline.com/]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu if you have any questions about the UWC, need any assistance with scheduling, or would like to schedule a recurring appointment with your favorite tutor.

University Library

The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 400,000 eBooks and 82,000 journals, in addition to the 96,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available 24 hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place virtually through WebEx, Microsoft Teams or in-person at the library. [Schedule an appointment here](https://tamuct.libcal.com/appointments/?g=6956) [https://tamuct.libcal.com/appointments/?g=6956]. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our [Library website](http://tamuct.libguides.com/index)

[http://tamuct.libguides.com/index].

OPTIONAL POLICY STATEMENTS

A Note about Sexual Violence at A&M-Central Texas

Sexual violence is a serious safety, social justice, and public health issue. The university offers support for anyone struggling with these issues. University faculty are mandated reporters, so if someone discloses that they were sexually assaulted (or a victim of Domestic/Dating Violence or Stalking) while a student at TAMUCT, faculty members are required to inform the Title IX Office. If you want to discuss any of these issues confidentially, you can do so through Student

Wellness and Counseling (254-501-5955) located on the second floor of Warrior Hall (207L).

Sexual violence can occur on our campus because predators often feel emboldened, and victims often feel silenced or shamed. It is incumbent on ALL of us to find ways to actively create environments that tell predators we don't agree with their behaviors and tell survivors we will support them. Your actions matter. Don't be a bystander; be an agent of change. For additional information on campus policy and resources visit the [Title IX webpage](https://www.tamuct.edu/compliance/titleix.html) [https://www.tamuct.edu/compliance/titleix.html].

Behavioral Intervention

Texas A&M University-Central Texas cares about the safety, health, and well-being of its students, faculty, staff, and community. If you are aware of individuals for whom you have a concern, please make a referral to the Behavioral Intervention Team. Referring your concern shows you care. You can complete the [referral](https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2) online

[https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2].

Anonymous referrals are accepted. Please see the [Behavioral Intervention Team](https://www.tamuct.edu/bit) website for more information [https://www.tamuct.edu/bit]. If a person's behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5805.

OTHER POLICIES

NA

Copyright Notice

Students should assume that all course material is copyrighted by the respective author(s). Reproduction of course material is prohibited without consent by the author and/or course instructor. Violation of copyright is against the law and Texas A&M University-Central Texas' Code of Academic Honesty. All alleged violations will be reported to the Office of Student Conduct.

Copyright. 2022 by *Khaldoon Dhou* at Texas A&M University-Central Texas, *College of Business Administration*; 1001 Leadership Place, Killeen, TX 76549; 254-519-5437; Fax 254-519-5470; kdhou@tamuct.edu