DA 6813 902

Data Analytics Practicum I

Course Syllabus Spring 2024

Course Information

Course Description: Students will be presented a big picture understanding of data analytics, including its purpose, common benefits and challenges, important analytic processes, and what is needed to perform data analytics, such as skills, tools, technology, etc. Students will be introduced to a wide variety of data analytics applications in a wide variety of fields, which may include some of the topics from fields such as information technology, cyber security, bioinformatics, biomedical/health, insurance and risk, finance, economics, accounting, business intelligence, crime and fraud detection, marketing and customer analytics, energy and environment, manufacturing and operations, and logistics and supply chain.
Credit Hours: 3
Course Modality: Mostly in-person, some online

Instructor Contact Information

Instructor Name: Max F Kilger
Department
M
Office Location
san pedro 260C
Student Hours
by appt
Phone Number(s): 9542427484
Email Address: max.kilger@utsa.edu

Learning Goals

At the end of the course, you will be able to:

- Gain experience in applying data analytics to a real world research task using big data from an external company.

- Provide the student with additional skills and expertise that we have learned is in demand in the marketplace where we have not yet have time to work into the regular curriculum.

- Provide the opportunity to follow through on a project from start to finish to gain a better perspective on the entire data analytics process.

- Supplement the skills and knowledge in data analytics that will be needed to work effectively at an external practicum in Practicum II. For students that are already employed, this course will supplement their existing skills and expertise.

Course Materials

The Little Red SAS book
Included here in Canvas. No assignments are given for this book but it is a great beginner SAS coding reference.

Assessments and Assignments

All the assignments are included in the Assignments section of Canvas. Note that there are assignments pretty much every week. Do not wait and put off doing the assignment until the last minute - the course covers a lot of material and catching up will be difficult. If you are going to be late with an assignment then tell me why and when you will have it submitted. I am sympathetic to the tough workload in this program and I want you to do a good job. If you don't contact me about late assignments then I will hunt you down. If you fail to respond to my queries about where the assignment is then I will assign it a zero grade. Communication with your instructor is essential in this course.

Activities and Grading

Activity	Quantity	%
Review Modules	6	10
time series exercises	4	15
time series project	1	30
market segmentation exercises	6	20
market segmentation presentation	1	25
Total		**100%**

Grade Distribution and Letter Grade

Letter Grade	Grade Range
A+	99+
A	92-98
A-	90-91
B+	87-89
B	83-86

Letter Grade	Grade Range
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	< 60
No rounding is used. You MUST make the point break!	

Course Schedule

For a list of important university-wide dates, review One Stop's academic calendar.

Topic/Module	Learning Objectives	Activities/Assignments	Due Date
		Review Module 2 part 1	1/29
		Review Module 1 part 1	1/29
		Review Module 1 part 2	1/29
		Review Module 2 part 2	2/5
		Review Module 3 part 2	2/5
		Review Module 3 part 1	2/5
		time series exercise #2	2/12
		time series exercise #3	2/19
		Bayes Box exercise - exercise #4	2/26
		Time Series Project	2/26
		Market Segmentation exercise #2 - reading in raw data and creating new variables	3/11
		Market Segmentation exercise #1 - Design the Market Segmentation	3/11

Topic/Module	Learning Objectives	Activities/Assignments	Due Date
		time series exercise #1	3/18
		Market Segmentation Presentation - style	4/22
		Market Segmentation Presentation - Content	4/22
		Market Segmentation exercise # 6	4/27
		Market Segmentation exercise #5 - gap analysis	4/27
		Market Segmentation exercise #3 - Principal Components Analysis	4/27
		Market Segmentation exercise #4 - k means clustering	4/27

Communication Plan

You can use Canvas to email me and I can use Canvas to email you. You should only use your utsa email - do not use other email accounts - this is a university requirement. I would suggest that in addition you text my personal mobile phone number 954.242.7484 - which I give out to every EMBA student - to let me know you've sent an email. I get several hundred emails a day and your email could get lost in the traffic. Texting me in addition alerts me that you've sent me something to read.

In addition, I am available to students pretty much 24/7 - you can use email and text or a phone call days, nights, weekends or holidays. Even if I am overseas I will answer your email, call or text. The only times that I will be unavailable to you are when I am in class, I am in a meeting or I am in the air somewhere.

About Me

Max Kilger is a Professor of Practice holding joint appointments in the Management Science & Statistics Department as well as in the Department of Information Systems & Cyber Security at the University of Texas at San Antonio. He is a core faculty member of the UTSA School of Data Science and directed the Master in Data Analytics program for eight years. Max is currently the Academic Director of the UTSA IC CAE Critical Technology Studies Program which prepares young people for a career in the Intelligence Community. Max received his Ph.D. in Social Psychology from Stanford University. He has over 20 years of experience in the area of information security concentrating on the social and psychological factors motivating malicious online actors, hacking groups and cyberterrorists. Max has written and co-authored a number of journal articles, book chapters and books in the national security space on profiling motivations of malicious online actors, the social structure of the hacking community, future emerging digital threats, cyberviolence, factors related to civilian attacks on critical infrastructure, hybrid warfare and the emergence of cyberterrorism. He co-authored the popular book Reverse Deception: Organized Cyberthreat Counter-Exploitation as well being a co-author on a more recent book, Deception in the Digital Age.

He is a founding and board member of The Honeynet Project – a not-for-profit international information security organization with 40 teams of experts in 32 countries working for the public good. Max was a member of a National Academy of Engineering committee dedicated to make recommendations for combating terrorism following the September 11, 2001 attacks. He is also a faculty member of the Cyber Center for Security and Analytics and a regular speaker on national security policy in the cyber domain for the U.S. State Department's SUSI program. Max is a member of an international instructional team teaching NATO counterterrorism courses at COEDAT in Ankara Turkey, a participant in NATO's Science for Peace and Security Program in the Balkans and has participated in NATO's TIDE speaker series as well as authoring a paper on the future cyber battlefield for NATO's Allied Command Transformation Headquarters. Max is a frequent national and international speaker to industry, federal law enforcement, the military and intelligence communities.

My Teaching Philosophy

I believe that if students study and work hard they will succeed! I make myself available pretty much 24/7 for students and will whatever I can to do their best in the course. I also am a big believer in communication with the instructor. If you are having an issue with an exercise or assignment then contact me so I can help you or give you a bit of extra time to complete it. The most important objective is to do the best job that you can.

However, if you do not put in the effort or be sure to communicate when you have issues then it will be difficult to help you help yourself to a successful outcome for the course.

Essential Student Information

- **Important:** Bookmark and visit the Common Syllabus Information webpage to find important and valuable resources about counseling services, transitory/minor medical issues, supplemental instruction, tutoring services, academic success coaching, sexual harassment and sexual misconduct, campus safety and emergency preparedness, and the Roadrunner Creed.
- For technical requirements, support, and academic resources, visit the Student Support Gateway, where you can find all your tech and academic support resources in one place.
- Follow Online Learning Netiquette standards for your online communication activities. Please be mindful of the communication tools available in your course and use them for learning purposes. Class discussions take place in a respectful and safe environment, whether online or in person. UTSA encourages everyone to openly share their ideas and opinions without penalty or judgment, but learning should always be based on facts and research. It is possible to disagree without being disagreeable.
- UTSA provides reasonable accommodations to students via Student Disability Services. For more details on eligibility, policies, and requirements, please visit www.utsa.edu/disability or call (210) 458-4157.
- **UTSA Wellbeing Resources:** your wellbeing is a priority for us. UTSA is proud to partner with Wellness 360 and TimelyCare to provide students with access to quality health and mental health care. Visit the UTSA Students Wellbeing Resources to explore the services available.

Instructor-Initiated Drops

This course uses instructor-initiated drops for students who exceed the absence and/or missed assignment limit. Therefore, up to the last day for students to withdraw from an individual course, [date], you will be dropped for exceeding [insert number of absences/assignments etc.]. Students will receive at least one courtesy warning when approaching the absence/missed assignment limit. Notification will be sent using ASAP to the student's email address. A subsequent absence or missed assignment will result in being dropped from the course. Notification of being dropped will also be sent through ASAP to the student's email address. *This drop does not affect enrollment in other courses.* **Please consult the Dropping Courses webpage** for further details on the process and appeals.

Student Code of Conduct and Scholastic Dishonesty

The Student Code of Conduct is Section B of the Appendices in the Student Information Bulletin. Scholastic Dishonesty is listed in the Student Code of Conduct (Sec. B of the Appendices) under Sec. 203.

Artificial Intelligence (AI) Use Guidance

This is not a campus-wide policy and only applies to this course. This policy may change, with prior notice, to reflect developments in the technology.

Generative AI tools may be not used in this course. Note that generative AI can produce questionable results, including misinformation, nonexistent references, and bias, and its responses are often bland.

Copyright and Fair Use

It is important to understand the issue of intellectual property rights. You may not use the images or thoughts of others for profit or gain without their written permission. The UTSA library has a Copyright Laws and Public Performance Rights (PPR) page.

UTSA Wellbeing Resources

Your wellbeing is a priority for us. UTSA is proud to partner with Wellness 360 and TimelyCare to provide students with access to quality health and mental health care.

Students with Disabilities

The University of Texas at San Antonio, in compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act, provides "reasonable accommodations" to students with disabilities. Only those students who have officially registered with Student Disability Services and requested accommodations for this course will be eligible for disability accommodations. Instructors at UTSA must be provided official notification of accommodation through Student Disability Services. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.utsa.edu/disability or by calling Student Disability Services at (210) 458-4157. Accommodations are not retroactive.

Family Educational Rights and Privacy Act (FERPA)

FERPA grants students the right to control certain disclosures of their educational records. For a full explanation of your rights and to grant access to FERPA educational records, go to Student Catalog Annual FERPA Letter and One Stop Enrollment – FERPA Proxy Access. Without your consent or authorization of proxy access, UTSA may release Directory Information, such as but not limited to your name, email, phone, place of birth, and photograph, unless you have opted out of the release of Directory Information. To opt out, go to Restrict Directory Information Form.

Mandatory Reporting of Sexual Misconduct and Reporting of Health and Safety Information: If a student discloses an incident of sexual misconduct to any UTSA employee (other than to a designated confidential employee such as mental health counselor or PEACE advocate, a UTSA police officer using a pseudonym form or at a public awareness event), that information is not confidential, and the UTSA employee must report all known information to the UTSA Office of Equal Opportunity Services. Employees may also report any concerns about the health and safety of students or others to other school officials and/or law

enforcement. For a complete list of exceptions to FERPA, please see Student Catalog Annual FERPA Letter and HOP 5.01.

Video and Audio Recording

As the instructor of this course, I may record meetings and lessons. You are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Recordings may not be published, reproduced, or shared with those not in the class. If the instructor or a UTSA office plans any other uses for the recordings, consent of the students identifiable in the recordings is required before such use unless an exception is allowed by law. For more information on your privacy and class recordings, review Student Privacy (FERPA) in Virtual Classrooms and Other Educational Recordings and the Guide to Secure Video Conferencing Tools.

Changes

The syllabus is subject to change at the instructor's discretion. Any changes/corrections to the course materials, assignment dates, or other updates will be communicated to the students ahead of time. You are responsible for checking Canvas for corrections or updates to the syllabus.

Note that this course is a three credit course that has consolidated the previous 1 credit and 2 credit Practicum 1 courses.