

CIS 5356-125, 10517, Web & Social Analytics

Spring 2023

Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION

January 17, 2023 – March 10, 2023

Class meeting day: Monday

Time: 2:00 pm to 4:45 pm

Location: Founders Hall 207

This course meets face-to-face, with supplemental materials made available online through the A&M-Central Texas Canvas Learning Management System [<https://tamuct.instructure.com/>].

INSTRUCTOR AND CONTACT INFORMATION

Instructor Rahul Dwivedi, PhD

Office Founders Hall 323H

Phone: NA

Email: rahul.dwivedi@tamuct.edu (email is the preferred mode of communication)

Office Hours

Monday: 11:30 am – 1:30 pm

Students may also request a virtual meeting at any other appropriate time during weekdays (Monday – Friday) depending upon the availability of the instructor.

Student-instructor interaction

I check my university email many times a day and typically respond within 24 hours of receiving emails on weekdays and within 48 hours on weekends. Apart from office hours, email is the preferred mode of communication.

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:
 - o [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]
- 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

For updates on COVID information, please monitor the University [website](#)
[https://www.tamuct.edu/covid19/]

COURSE INFORMATION

Course Overview and description

The course focuses on retrieving and analyzing social media data from the web. The course also provides an understanding and practical applications of social networks. Topics covered include social media data acquisition & analysis, social network representation & visualization, network cohesion, homophily, affiliation network, clustering, social influencer identification, etc. The course also investigates managerial understanding of web analytics measures using open-source tools.

Course Objective or Goal

Student Learning Outcomes

Successful completion of this course should enable students to:

- Demonstrate working with Twitter API to get Tweets from the Twitter platform
- Demonstrate working with Facebook Graph API to analyze personal Facebook page
- Download personal Facebook data and analyze Facebook posts
- Visualize a social network using the Python Programming language
- Visualize and analyze a network of Wikipedia pages
- Analyze a social network using common network characteristics and centrality measures
- Demonstrate knowledge of deep neural networks
- Demonstrate use of the Google vision API for image classification and face detection
- Demonstrate use of various Python packages for basic natural language processing

Competency Goals Statements (certification or standards)

NA

Required Reading and Textbook(s)

- Klassen, M., & Russell, M. A. (2019). *Mining the social web*. O'Reilly Media, Incorporated. (Referred to as MSW later).
- Zinoviev, D. (2018). *Complex network analysis in Python: Recognize-construct-visualize-analyze-interpret*. Pragmatic Bookshelf. (Referred to as CNA later).

Reference Textbook (optional)

- Géron, A. (2019). *Hands-on machine learning with Scikit-Learn, Keras, and TensorFlow: Concepts, tools, and techniques to build intelligent systems*. " O'Reilly Media, Inc."

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.

Reading Assignments: All assigned chapters will be used for class. There may be supplementary reading material used for canvas discussions. Students are expected to study the assigned readings for canvas discussions (if any).

Supplementary Material: The course textbook may be supplemented with other materials that may include research paper readings, handouts, oral presentations, industry articles, videos including TED talks, case studies, PowerPoint presentations, etc. Students must know how to search for and download research papers/articles from the Web (more specifically from Google scholar (www.scholar.google.com)).

COURSE REQUIREMENTS

Course Requirements: (include point values for each- not just a percentage)

Examinations: There will be one comprehensive exam at the end of the semester. The exam will be worth 50 points. The exam will consist of analytics problems (problems to be solved using Python with or without data). **The exam will be open book / open notes** and will be available via Canvas. For the exams, you will be required to know not only the material from the textbook chapters but also material from the class lectures such as PowerPoint slides and any supplementary/additional material provided. You must know to work with Python independently.

Individual homework: There will be two individual homework. Students will get two weeks to work on the individual homework assignments. Each homework is worth 10 points and may cover one or more of the course topics.

Homework turned in after the due date is considered late. **2 points will be deducted for each day the homework is late.** Special circumstances need to be discussed with the instructor ahead of time when possible.

Semester-wide individual project report: There will be one semester-long web and social analytics project worth 30 points. The student must choose a freely available secondary data source from the Web (more on this during the second or third week of the class) and pose some research questions in the form of hypotheses based on some underlying theories (may use www.scholar.google.com or University library databases to find research papers for theories). https://is.theorizeit.org/wiki/Main_Page is also a useful resource for IS theories. There are many sources of secondary data available on the Web, you are free to explore and are not restricted to a specific type of data or application domain.

The aim of the project is to use the web and social analytics techniques learned during the class to test the verifiability of the proposed research questions or hypotheses. Students are not required to turn in the data or the programming code but must submit a written report in the form of a research paper (guidelines for the write-up will be provided soon). Although it is not a requirement to come up with new research problem(s), students are encouraged to do so. Since this is only an 8-week semester, you must plan and act quickly to finish the project on time.

The due date for the individual project is the last day of the semester (March 10th, 2023) at midnight (11:59 PM). In case you need an extension, discuss it with the instructor ahead of time.

Grading Criteria Rubric and Conversion

Item	Quantity	Points	Total / Percent
Exam	1	50	50
Individual Homework's	2	10	20
Semester-long individual project using Python	1	30	30
Total			100

Exams, discussion posts, homework assignments, and the individual project will receive a numeric score (0-100) each. These scores will be totaled to ultimately be converted to letter grades of A, B, C, D, or F as shown in the example below:

	Percent earned by Student	Max points	Points to be added to the final grade
Exam	80%	50	40
Homework 1	60%	10	6
Homework 2	80%	10	8
Semester-long individual project report	80%	30	24
TOTAL		100	78

89.5 – 100 = A

79.5 – 89.49999 = B

69.5 – 79.49999 = C

59.5 – 69.49999 = D

Below 59.5 = F

Grades will not be curved (in the above example, the student with 78 will receive a C NOT a B).

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 10 days after the due date.

Grading Policies

Refer to the late policy for individual homework assignments above.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar

Week	Dates	Content	Readings	Assignments
1	January 17 – January 20	Course Welcome, Faculty introduction, and overview of course objectives, and expectations. Course prework (software installations).	Read the Syllabus in-depth.	
January 24 th – Deadline to drop first 8-week classes with no record				
2	January 23 – January 27	Mining Twitter	Chapter 1 of MSW.	Homework 1 is available.
3	January 30 – February 3	Mining Facebook	Chapter 2 of MSW.	
4	February 6 – February 10	Introduction to Network Analysis in Python	Chapters 1, 3, and 5 of CNA.	Homework 1 is due.
5	February 13 – February 17	Networks based on explicit relationships	Chapters 6, 7, and 8 of CNA.	Homework 2 is available.
6	February 20 – February 24	Mining Instagram (introduction to deep learning and ANNs)	Chapter 3 of MSW.	
7	February 27 – March 3	Mining Text Files (introduction to NLP)	Chapter 5 of MSW.	Homework 2 is due.
8	March 6 – March 10	Exam and Mining web pages using NLP	Chapter 6 of MSW.	The exam and project are due on March 10 th , 11:59 PM.

Important University Dates

Available at: <https://www.tamuct.edu/registrar/academic-calendar.html>

TECHNOLOGY REQUIREMENTS AND SUPPORT

You will need Anaconda Navigator (available for download from <https://www.anaconda.com/products/distribution>) to work through the coding examples and to individually work on the homework assignments, one exam, and the project.

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

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>]

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),
[https://www.tamuct.edu/student-affairs/student-conduct.html].

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

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/samlso&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.

Important information for Pregnant and/or Parenting Students

Texas A&M University-Central Texas supports students who are pregnant, experiencing pregnancy-related conditions, 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](http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf) 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 Library & Archives

The University Library & Archives provides many services in support of research across campus and at a distance. We offer over 350 electronic databases containing approximately 631,525 eBooks and 75,149 journals, in addition to the 97,443 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) [https://tamuct.libcal.com/appointments]. 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](https://tamuct.libguides.com/index) [https://tamuct.libguides.com/index]

University Writing Center

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. The hours of operation are from 10:00 a.m.-5:00 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 Saturday 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/) [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.

OTHER 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](#) online

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

Anonymous referrals are accepted. Please see the [Behavioral Intervention Team](#) 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

Policies related to absence, grading, etc.

You are responsible for all class material presented during an absence.

- Individual homework's, exams and project must be submitted through Canvas and due on the specified due date/time. No email submissions will be accepted except under unforeseen circumstances.
- Late penalty will be applied to individual homework(s) submitted after due dates. Refer to late submission policy for this item above. Other items (exams and project) will have strict hard deadlines.

Plagiarism policy: *Students are strongly advised not to copy and paste material from websites, study guides (such as Chegg, Course Hero, etc.), research articles, industry articles, blog posts or any other online resources. Students must rephrase and properly cite any of the material used in their submits. All your submitted writings will be checked using an automated plagiarism check software already built into Canvas available from the University. Following point deductions will apply to your submitted writings:*

- *More than 30% plagiarized – Not acceptable and students will not earn any points*
- *21% to 30% plagiarized – 70% points deducted with warning to be more careful with future submits*
- *11% to 20% plagiarized – 60% points deducted with warning to be more careful with future submits*
- *0% to 10% plagiarized – Acceptable with warning to be more careful during future submits*

My personal statement

- I am almost always available via email and typically respond within 24 hours except on weekends. Student may also request virtual meeting via WebEx or Microsoft Teams, if required.
- I prefer email to phone conversations.
- I reserve the right to modify the course syllabus during the semester for the benefit of the students.

- I reserve the right to supplement materials presented in the text with additional course material that may help the students to understand the topic better.

I reserve the right to modify grading policy rubrics. Any change to grading rubrics will be applied to current and possible future assignments.

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.