

**CIS 4302 – 130 – 11349, Advanced Business Analytics**

**Spring 2021**

Texas A&M University-Central Texas

**COURSE DATES, MODALITY, AND LOCATION**

*January 19, 2021 – May 14, 2021*

*This is an independent study, 100% online and uses the A&M-Central Texas Canvas Learning Management System [<https://tamuct.instructure.com/>].*

**INSTRUCTOR AND CONTACT INFORMATION**

**Instructor Rahul Dwivedi, Ph.D.**

**Office Founders Hall 323H**

**Phone: Not Available**

**Email:** [rahul.dwivedi@tamuct.edu](mailto:rahul.dwivedi@tamuct.edu) (preferred) or Canvas inbox.

**Office Hours**

*Since this independent study is 100% online, concerns of students will be addressed via email. Students can send emails with their concerns or questions related with any aspect of the course any time between 9 AM – 5 PM Monday to Thursday. If there's something which needs to be addressed via virtual face-to-face meeting, students can request WebEx (<https://tamuct.onecampus.com/task/all/webex>) meeting(s) as well.*

**Student-instructor interaction**

*I check my University email many times a day and typically responds within 24 hours of receiving emails on weekdays. Email is also the best mode of communication.*

This a 100% online independent study course that makes extensive use of the TAMUCT Canvas Learning Management System (<https://tamuct.instructure.com>). The course syllabus, schedule, supplemental readings, class announcements, power point slides, learning modules, homework assignments, exams and other course related documents will be posted on Canvas throughout the week. The student is responsible for the posted material and should check Canvas several times a week for updates.

**Note: Video lectures may be available on Canvas for certain course topics on student request.**

**WARRIOR SHIELD**

**Emergency Warning System for Texas A&M University-Central Texas**  
Warrior Shield is an emergency notification service that gives Texas A&M University-Central

Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in Warrior Shield through their myCT email account.

Connect to Warrior Shield by [911Cellular](https://portal.publicsafetycloud.net/Account/Login) [https://portal.publicsafetycloud.net/Account/Login] to change where you receive your alerts or to opt out. By staying enrolled in Warrior Shield, university officials can quickly pass on safety-related information, regardless of your location.

## **COVID-19 SAFETY MEASURES**

To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, Texas A&M University-Central Texas has adopted policies and practices to minimize virus transmission. All members of the university community are expected to adhere to these measures to ensure their own safety and the safety of others. Students must observe the following practices while participating in face-to-face courses, course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.) and co-curricular programs:

- Self-monitoring—Students should follow CDC recommendations for self-monitoring. Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely and should not participate in face-to-face instruction. Students required to quarantine must participate in courses and course-related activities remotely and must not attend face-to-face course activities. Students should notify their instructors of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities.
- Face Coverings— Face coverings must be worn inside of buildings and within 50 feet of building entrances on the A&M-Central Texas Campus. This includes lobbies, restrooms, hallways, elevators, classrooms, laboratories, conference rooms, break rooms, non-private office spaces, and other shared spaces. Face coverings are also required in outdoor spaces where physical distancing is not maintained. The university will evaluate exceptions to this requirement on a case by case basis. Students can request an exception through the Office of Access and Inclusion in Student Affairs.
  - o If a student refuses to wear a face covering, the instructor should ask the student to leave and join the class remotely. If the student does not leave the class, the faculty member should report that student to the Office of Student Conduct. Additionally, the faculty member may choose to teach that day’s class remotely for all students.
- Physical Distancing—Physical distancing must be maintained between students, instructors, and others in the course and course-related activities.
- Classroom Ingress/Egress—Students must follow marked pathways for entering and exiting classrooms and other teaching spaces. Leave classrooms promptly after course

activities have concluded. Do not congregate in hallways and maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.

- The university will notify students in the event that the COVID-19 situation necessitates changes to the course schedule or modality.

## **COURSE INFORMATION**

### **Course Overview and description**

Follow the traditional descriptive/predictive/prescriptive framework to analyze large sets of data and explain the theory of formulating statistical models. Special emphasis on cluster analysis, Naïve Bayes, Optimization Modeling, simple and multiple linear regression, and ensemble modeling.

### **Course Objective or Goal**

#### **Student Learning Outcomes**

After successful completion of this course student will be able to:

- Define descriptive, predictive, and prescriptive analytics.
- Differentiate between descriptive, predictive, and prescriptive analytics.
- Explain the theory of formulating statistical models.
- Analyze data using the techniques of cluster analysis, Naïve Bayes, Optimization Modeling, simple and multiple linear regression, and ensemble modeling.

#### **Competency Goals Statements (certification or standards)**

Not applicable.

#### **Required Reading and Textbook(s)**

Foreman, J. W. (2013). Data Smart: Using Data Science to Transform Information into Insight. 1<sup>st</sup> Edition. Publisher: Wiley. ISBN: 978-1118661468

**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. Also, an electronic version of the textbook(s) may be available for use.

**Supplementary Material:** The course textbook will be supplemented with other materials that may include research articles, case studies, industry articles, videos including TED talks, power point presentations etc. Students must know how to search for and download research papers from the Web (more specifically from Google scholar [www.scholar.google.com](http://www.scholar.google.com)) and from University library (<https://tamuct.libguides.com/index>).

## COURSE REQUIREMENTS

**Examinations:** There will be two exams. Each exam is worth 30 points. The first exam will be based on chapters 1 to 4 of the text and the second exam on chapters 5-7. All the exams will be available via Canvas. The exams will be available on Canvas for approximately one to three days. The exams will be open book. The exams will emphasize on analyzing data using Microsoft Excel using techniques covered during the course.

For the exams, you will be required to know not only the material from the textbook chapters, but also material from the power point slides and any supplementary/additional material. You are required to take the exam(s) on the available days. There will be no makeup exams.

**Individual homework assignments:** There will be two homework assignments. Each homework assignment is worth 10 points. The homework assignment will also be based on analyzing data using Microsoft Excel using the techniques covered during the course. Students will get four weeks to work on the homework assignment and must be submitted on or before the due date. 1 point will be deducted each day the homework assignment is late.

**Individual project:** Student will find an Excel/CSV dataset from the web and analyze this dataset using one or more of the analytics techniques covered in the course (more on this later). Student must propose one or more research questions in the form hypothesis/hypotheses based on the data. The research question(s) must then be answered based on the result(s) obtained after analyzing the dataset. The outcome of the individual project should be submitted to the instructor in the form of a written report in APA format (double spaced, 10 – 20 pages, Times New Roman Font 12), with references. The individual project is worth 20 points. The individual project is due on May 14<sup>th</sup>, 2021 mid night with no late penalty. Projects turned in after due date will not be considered for grading.

## Grading Criteria Rubric and Conversion

Item	Quantity	Points	Total / Percent
Exam(s)	2	30	60
Homework assignments	2	10	20
Individual Project	1	20	20
<b>TOTAL</b>			<b>100</b>

Exams, quizzes, homework assignments, individual project and case study presentation will receive a numeric score (0-100) each. These scores will be converted to points and totaled to ultimately be converted to letter grade 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 1	78%	30	23.4
Exam 2	85%	30	25.5
Homework 1	60%	10	6
Homework 2	75%	10	7.5
Individual project	80%	20	16
<b>TOTAL</b>		<b>100</b>	<b>78.4</b>

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 78.4 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 two weeks after the due date.

### Grading Policies

*Refer to late policy related with homework assignments above. Exams and individual project are due on the deadlines. No work will be accepted after the last day of the semester i.e. after May 14<sup>th</sup>, 2020.*

## COURSE OUTLINE AND CALENDAR

### Complete Course Calendar

Week	Dates	Chapter	Homework availability/due at midnight	Notes
1,2	January 19 – 29	Faculty Introduction and Syllabus		
3	February 1 – 5	Chapter 1		Power point slides based on chapter 1 available
February 3 <sup>rd</sup> , 2020: Deadline to drop 16-week classes with no record				
4,5	February 8 – 19	Chapter 2	Homework 1 available	Power point slides based on chapter 2 available
6,7	February 22 – March 5	Chapter 3		Power point slides based on chapter 3 available
8	March 8 – March 12	Chapter 4	Homework 1 due	Power point slides based on chapter 4 available
9	March 15 – March 19	Spring Break: University Closed		
10	March 22 – March 26	Exam 1 available/due		
11,12	March 29 – April 9	Chapter 5	Homework 2 available	Power point slides based on chapter 5 available
13,14	April 12 – April 23	Chapter 6		Power point slides based on chapter 6 available
15,16	April 26 – May 7	Chapter 7	Homework 2 due	Power point slides based on chapter 7 available
17	May 10 – 14: Exam 2 available/due. Individual Project due on May 14 <sup>th</sup> , 2021 mid night (11:59 PM)			

### Important University Dates

For important university dates from the current Academic Calendar, refer to: <https://www.tamuct.edu/registrar/academic-calendar.html>

## **TECHNOLOGY REQUIREMENTS AND SUPPORT**

The course is heavily based on using Microsoft Excel for analyzing data. Hence, student must have Microsoft Excel downloaded and installed on his/her computer/laptop.

### **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](mailto: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.*

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## **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://dynamicforms.ngwebsolutions.com/casAuthentication.ashx?InstID=eaed95b9-f2be-45f3-a37d-46928168bc10&targetUrl=https%3A%2F%2Fdynamicforms.ngwebsolutions.com%2FSubmit%2FForm%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. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, working with others in an unauthorized manner, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be referred to the university's Office of Student Conduct. Ignorance of the university's standards and expectations is never an excuse to act with a lack of integrity. 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 report](https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=0), [[https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout\\_id=0](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 Office of Access 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/index.html) [<https://www.tamuct.edu/student-affairs/index.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, on a remote online basis. Visit the Academic Support Community in Canvas to view schedules and contact information. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Student success coaching is available online upon request.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, success coaching, or have any other question, contact Academic Support Programs at (254) 501-5836, visit the Office of Student Success at 212F Warrior Hall, or by emailing [studentsuccess@tamuct.edu](mailto:studentsuccess@tamuct.edu).

Chat live with a 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**

The University Writing Center (UWC) at Texas A&M University–Central Texas (TAMUCT) is a free service open to all TAMUCT students. For the Spring 2021 semester, all services will be online as a result of the COVID-19 pandemic. The hours of operation are from 10:00 a.m.-5:00 p.m.

Monday thru Thursday with satellite hours Monday thru Thursday from 6:00-9:00 p.m. The UWC is also offering hours from 12:00-3:00 p.m. on Saturdays.

Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. 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. While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. 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](mailto:bruce.bowles@tamuct.edu) if you have any questions about the UWC and/or need any assistance with scheduling.

### **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 250,000 eBooks and 82,000 journals, in addition to the 85,000 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 on Skype or in-person at the library. 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].

**For Spring 2021, all reference service will be conducted virtually. Please go to our [Library website](http://tamuct.libguides.com/index) [http://tamuct.libguides.com/index] to access our virtual reference help and our current hours.**

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

Anonymous referrals are accepted. Please see the [Behavioral Intervention Team](https://www.tamuct.edu/student-affairs/bat.html) website for more information [<https://www.tamuct.edu/student-affairs/bat.html>]. If a person's behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5800.

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## OTHER POLICIES

Policies related to absence, grading, etc.

- Homework's must be submitted through Canvas and due on the mid night (11:59 PM) of specified due date/time. No email submissions will be accepted except under unforeseen circumstances.
- Late penalties will be applied to items submitted after due dates. Refer to late submission policy for individual homework assignments. Exams and individual project must be submitted on due dates.
- The exams will be available for one to three days on Canvas as explained above and must be submitted via Canvas.

## **My personal statement**

- You will receive feedback in the form of graded assignments within two weeks after the due date. I want you to read the feedback that I provide to you (your personal grading notes and Canvas emails).
- I am almost always available via email and typically respond within 24 hours except on weekends. Student may also request WebEx meeting(s), 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.