CIS 5316-110, CRN: 11078, Advanced Database Management

Spring 2021
Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION

Dates: January 19, 2021 – May 14, 2021
Location: Founders Hall, Room 308
Meeting Days/Time: Tuesdays, 6:00-9:00pm
Modality: This is a 100% face-to-face course, with all course materials made available online using the A&M-Central Texas Canvas Learning Management System [https://tamuct.instructure.com/].

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Randy Brown
Office: Virtual. I will have some office hours in FH 323J, but those are TBD and may be flexible.
Phone: Use COBA Number, below. NOTE: Email is best...
Email: For course related communications, please use Canvas “Inbox”
For non-course related, use rwbrown@tamuct.edu
COBA Department Main Phone Number: (254) 519-5437
COBA Department Main Email: cobainfo@tamuct.edu
COBA Department Main Fax#: (254) 501-5825

Office Hours
Due to the COVID Epidemic and changing social distancing requirements, Physical Office hours are TBD. Best bet is to email me and schedule either a virtual visit or F2F visit in FH 323J.

Student-instructor interaction
Please send all course related correspondence through Canvas “Inbox”. Please use TAMUCT email only when Canvas is not available (or for non-course related correspondence). I check email several times a day during the week and at least once during the weekends. I will attempt to respond within 24 hours Mon-Thurs and within 48 hours on Fri through Sun. Please do not hesitate to stop by my office during the scheduled office hours or contact me via phone, Canvas Inbox, or TAMUCT email, if there are any personal problems or challenges that are hindering your regular progress in the course.

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) 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.
  - 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

This course will examine the methodologies of database management including data models, database design, normalization, SQL/PLSQL, NoSQL, performance and reliability, distributed database, data dictionaries, data integrity, security, and privacy.

Course Objective or Goal

Student Learning Outcomes

Successful completion of this course should enable the student to:

• Apply methodologies such as entity relationship diagrams and normalization in the design, implementation and modification of database
• Use SQL statements in a procedural programming language to manipulate database data
• Use the advanced SQL to create subqueries and correlated queries
• Use SQL functions to manipulate dates, strings, and other data
• Create and use views, updatable views, triggers and stored procedures
• Discuss what concurrency control is and what role it plays in maintaining the database’s integrity
• Describe distributed database management systems (DDBMSs) and their components
• Analyze factors that affect the performance of a database system
• Formulate efficient queries and tune the DBMS for optimal performance
• Discuss the four major approaches of the NoSQL data model and how they differ from the relational model

Required Reading and Textbook(s)

Book 1:
  b. Author: Carlos Coronel, Steven Morris
  c. ISBN: 9781305627482

Book 2:
  a. T-SQL Fundamentals, 3rd Ed.
  b. Author: Ben-Gan
  c. ISBN: 9781509302000

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

Reading Assignments: All assigned chapters will be used as basis for class and/or blackboard discussions. Study the assigned readings before each class.

Attendance/Participation Policy: Class attendance is required. The policy as officially stated by the University will be enforced. Students are expected to make arrangements with the instructor before missing a series of classes due to job requirements. Students are responsible for any material missed during an absence. In all cases, the responsibility remains with the students to meet/obtain all course requirements/changes. If you are not present the class period your presentation is scheduled, the presentation grade is zero. Regular course progress is expected. It is each student’s responsibility to review the blackboard and syllabus for the latest information, assignments and examinations. This will be worth 10% (100 points) of your grade.

NOTE: (from TAMU-CT Student Catalog): Student absences are considered by the University to be strictly between the individual student and faculty member. The faculty member has the responsibility and authority to determine whether make-up work can be done because of absences. Students may request make-up consideration for valid and verifiable reasons such as illness, death in the immediate family, legal proceedings, or participation in University-sponsored activities. Students who participate in University-sponsored activities are responsible for obtaining a written explanation for their absence from the faculty/staff member who is responsible for the activity.

Examinations: There will be a midterm and a final exam worth 200 points each (40%). Makeup exams will be given ONLY when arrangements have been made PRIOR to the class meeting. Late exams will NOT be accepted!

Homework/Case Problems: Homework will be assigned most weeks and is intended to reinforce the concepts discussed in class. Each homework assignment will be worth 20 points, but only the top 10 will count (200 points total).

Group Project: Each Student will be assigned to a group required to design a communications system. More information about this project will be distributed by the end of the fourth week of class. Groups will be randomly assigned after the first week of class. The group project will include a presentation and will be worth 300 points (30%).

Late Submissions: Assignments will be considered late if submitted after the due date/time. A late penalty of 5% per DAY (max of 20% deduction per week) will be applied. That means that NO submissions will be accepted if submitted more than 5 weeks after the due date. In addition, discussions MUST be completed within the week during which the discussion is assigned (i.e. late discussions will NOT be allowed). Late tests will NOT be accepted! NOTE: NO work will be accepted after 5/14/2021.
**Other Notes about assignments:** Most (ALL) assignments will be submitted via Canvas.

- All assignments are due at the end of the week. Normally Sunday at 11:59pm, but the Final week will end on Friday, May 14, 2021 at 11:59pm.
- Please follow the submission details for each assignment. As most will be Word or PDF, you do NOT need to ZIP (Please don’t!). In fact, Canvas should not let you submit in any format other than what is specified.

**Grading Criteria Rubric and Conversion**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
<th>Percent</th>
<th>My Grade</th>
<th>Percentage</th>
<th>Points</th>
<th>Grade</th>
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<tbody>
<tr>
<td>Exams (2)</td>
<td>400</td>
<td>40%</td>
<td></td>
<td>90.0-100%</td>
<td>900-1000</td>
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<tr>
<td>Group Project</td>
<td>300</td>
<td>30%</td>
<td></td>
<td>80.0-89.9%</td>
<td>800-899</td>
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<tr>
<td>Homework</td>
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<td>20%</td>
<td></td>
<td>70.0-79.9%</td>
<td>700-799</td>
<td>C</td>
</tr>
<tr>
<td>Participation</td>
<td>100</td>
<td>10%</td>
<td></td>
<td>60.0-69.9%</td>
<td>600-699</td>
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<tr>
<td>Totals</td>
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<td>100%</td>
<td>0</td>
<td>0-59.9%</td>
<td>0-599</td>
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</table>

**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 for weekly assignments, discussions, quizzes and exams should be posted (no guarantees) within 7 days following the due date.

**Grading Policies**

1. All Discussions MUST be completed during the week(s) they are assigned – no late submissions will be accepted!
2. All Exams MUST be completed by the posted due date – no late exams will be accepted!
3. All other assignments MUST be competed by the course end date (5/14/2021). After 11:50pm on Friday 5/14/2021, the course will no longer accept submissions and may even disappear!

**COURSE OUTLINE AND CALENDAR**

**Complete Course Calendar**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Content</th>
<th>Assignments Due at Beginning of next Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19-Jan</td>
<td>Syllabus/Introductions</td>
<td>Syllabus Acknowledgement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chapter 1</td>
<td>Introduction Discussion</td>
</tr>
<tr>
<td>2</td>
<td>26-Jan</td>
<td>Chapter 2 &amp; 3</td>
<td>Homework 1</td>
</tr>
<tr>
<td>3</td>
<td>2-Feb</td>
<td>Chapter 4</td>
<td>Homework 2 &amp; 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group Project Deliverable 1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>9-Feb</td>
<td>Chapter 5</td>
<td>Homework 4</td>
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<tr>
<td>5</td>
<td>16-Feb</td>
<td>Chapter 6</td>
<td>Homework 5</td>
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<tr>
<td>6</td>
<td>23-Feb</td>
<td>Chapter 7</td>
<td>Homework 6</td>
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<tr>
<td></td>
<td></td>
<td>Group Project Deliverable 1</td>
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<tr>
<td>Week</td>
<td>Date</td>
<td>Chapter</td>
<td>Assignment</td>
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<tr>
<td>7</td>
<td>2-Mar</td>
<td>Chapter 8</td>
<td>Homework 7</td>
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<tr>
<td>8</td>
<td>9-Mar</td>
<td>Chapter 9</td>
<td>Mid-Term Exam</td>
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<td></td>
<td>Homework 8</td>
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<td>16-Mar</td>
<td>Spring Break</td>
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<td>Spring Break</td>
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<tr>
<td>9</td>
<td>23-Mar</td>
<td>Chapter 10</td>
<td>Homework 9</td>
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<tr>
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<td>Group Project Deliverable 1</td>
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<tr>
<td>10</td>
<td>30-Mar</td>
<td>Chapter 11</td>
<td>Homework 10</td>
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<tr>
<td>11</td>
<td>6-Apr</td>
<td>Chapter 12</td>
<td>Homework 11</td>
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<tr>
<td>12</td>
<td>13-Apr</td>
<td>Chapter 13</td>
<td>Homework 12</td>
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<tr>
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<td>Group Project Deliverable 1</td>
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<tr>
<td>13</td>
<td>20-Apr</td>
<td>Chapter 14</td>
<td>Homework 13</td>
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<tr>
<td>14</td>
<td>27-Apr</td>
<td>Chapter 15</td>
<td>Homework 14</td>
</tr>
<tr>
<td>15</td>
<td>4-May</td>
<td>Chapter 16</td>
<td>Homework 15</td>
</tr>
<tr>
<td>16</td>
<td>11-May</td>
<td>Final Exam</td>
<td>Final Exam (Due 5/14/2021)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Group Project Final Project (Due 5/14/2021)</td>
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</tbody>
</table>

**Important University Dates**
Please refer to the online TAMUCT calendar found at: [https://www.tamuct.edu/registrar/academic-calendar.html](https://www.tamuct.edu/registrar/academic-calendar.html)

**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]

*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](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] Dynamic Form through Warrior Web.

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].

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 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]. 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.

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 WCONline [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 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].

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

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].

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/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.

OTHER POLICIES
INSTRUCTOR POLICIES

1. Instructor reserves the right to modify the syllabus during the course of the semester for the benefit of the students.
2. Instructor reserves the right to supplement the material presented in the text with additional material that may benefit the students by either providing additional information or a different point of view.
3. Instructor expects that the students will act in a curious and professional manner in all interactions with other students and the instructor.
4. Instructor reserves the right to modify grading rubrics. Changes to grading rubrics are only made to current and/or future assignments.
5. Any changes made will be announced on Canvas.

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.

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