

**ACCT 5440
IT Auditing
Course Syllabus
Fall 2023**

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(CISA, CIA, CFE, CRISC, MCTS, CSX)**

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Office Hours: after class or by appt. – in person or Zoom

Class meets Thursdays 6:30 to 9:20 pm in BLB 080

Text Books:

Required: IT Auditing Using Controls to Protect Information Assets, 3rd edition (authors: Kegerreis, Schiller, Davis) – older versions are acceptable

ISBN-13: 978-1-260-45322-5

ISBN-10: 1-260-45322-7

Optional: ISACA CISA Review Manual 27th edition

ISBN-13: 978-1604207675

ISBN-10: 1604207671

Prerequisites:

ACCT 5020 (2020,2030), 4100, and 4400; BCIS 5090 (2610, 3610) or permission of instructor

Course Description:

This course addresses IT audit issues related to the computerized auditing environment. Audit techniques for substantive and controls testing, as well as forensic techniques are emphasized. Additional topics covered include security measures, electronic commerce, and controls in advanced on-line, teleprocessing systems.

This course describes how to become an effective IT audit team and maximize the value of the IT audit function. We oscillate between theory and in-depth details on performing specific types of IT audits. Standards, frameworks, regulations, and risk management techniques are also covered as a required knowledge base from which to achieve the following:

- Build and maintain an internal IT audit function with maximum effectiveness and value
- Audit entity-level controls and cybersecurity programs
- Assess data centers and disaster recovery
- Examine switches, routers, and firewalls
- Evaluate Windows, UNIX, and Linux operating systems
- Audit Web servers and applications
- Analyze databases and storage solutions
- Review big data and data repositories
- Assess end user computer devices, including PCs and mobile devices
- Audit virtualized environments

- Evaluate risks associated with cloud computing and outsourced operations
- Drill down into applications and projects to find potential control weaknesses
- Use standards and frameworks, such as COBIT5, ITIL, and ISO
- Implement proven risk management practices
- Learn best practices for auditing new technologies

Course Objectives:

By the end of the course, you should be able to:

- Identify key concepts and theories of audit risk as impacted by IT
- Understand How IT audit techniques can be applied to the audit of controls, transactions and account balances
- Execute appropriate data analytic steps using Alteryx software
- Evaluate risks and controls associated with IT application and general controls
- Understand Blockchain terminology and application
- Know how to develop an understanding of and able to identify audit issues involved in any issue related to computerized accounting

My hope for you this semester is that you will enjoy this course, achieve an understanding of both the theory and practice of IT auditing, and if you decide to sit for the CISA at some point in your career, you will ace it.

Course Requirements - General:

Attendance for the class is mandatory. Additionally, this course requires a significant time commitment, both inside and outside of the classroom. I estimate that you should spend an average of 9 hours per week outside of class reading, working homework problems, and doing research – some weeks will require less, and some will require more. It is important that you attend each class, participate in class discussions and complete all assigned work on a timely basis. Below is UNT's formal attendance policy:

UNT Attendance Policy

<https://policy.unt.edu/policy/06-039>

A majority of the learning in this course will be from class discussion. As such, you are expected to come into class with an understanding of the day's reading assignment and with a written solution to any assigned reading or homework problems. Thus, please be prepared to discuss that day's material.

Attendance is expected. If you cannot attend a class, it is your responsibility to check with your partner or group to find out what happened during class and what was assigned. Late assignment approval is only considered in cases of personal or dependent's health (doctor's note required), family emergency, or other exigent circumstances. This does not guarantee approval, only provides a beginning point for case review.

Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the instructional team prior to being absent, so you, the professor, and the instructional team can

discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings because you are ill, in mindfulness of the health and safety of everyone in our community.

If you are experiencing any symptoms of COVID-19 please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.

Remote instruction may be necessary if community health conditions change, or you need to self-isolate or quarantine due to COVID-19. Students will need access to a [webcam and microphone – faculty member to include what other basic equipment is needed] to participate in fully remote portions of the class. Additional required classroom materials for remote learning include: [list specific software, supplies, equipment or system requirements needed for the course]. Information on how to be successful in a remote learning environment can be found at <https://online.unt.edu/learn>.

Synchronous (live) sessions in this course may be recorded for students enrolled in this class section to refer to throughout the semester. Class recordings are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

UNT encourages everyone to wear a face covering when indoors, regardless of vaccination status, to protect yourself and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

Course Grading:

Point assignment:

Midterm	525
Final (non-comprehensive)	525
Group and Class participation and preparation	50
RPA certification	100
Alteryx Data Analytics Assignment	100
Semester Tech project	<u>100</u>
Total possible points	1400

Grade distributions follow the traditional 90%=A, 80%=B, 70%=C, etc

Course Requirements - Specific:

Your course grade will consist of three components:

a. Group and Class participation and preparation (p&p): 50 points

As stated above, a portion of each class will involve discussion and group participation. You are expected to attend class regularly and participate in the discussions. Attendance is a necessary but not sufficient condition for participation. Participation includes arriving on time and

prepared, and being involved (ask and answer questions, contribute to the learning process for others). You will also be expected to participate on-line, using Canvas. In summary, your grade is based on an expectation of frequent and enthusiastic participation and adequate preparation, in whatever form the class may employ.

Other activities included in this category include:

Attending a professional meeting – every student must attend a professional organization’s regularly scheduled monthly meeting during the semester. (20 points of extra credit will be awarded for attending an ISACA – North Texas chapter meeting – added to numerator, not denominator. This must be completed by Thanksgiving, please document your attendance by taking a picture with an officer – I know all of them.)

Team peer evaluation – your teammate will evaluate your participation on projects during the semester. See Canvas for the evaluation form.

Other class exercises - Grading criteria are: preparation outside of class on exercise, participation during class on discussion of solution

b. Assignments:

Data Analysis Project (group work): You are graduate students in a highly-regarded national accounting program. As such, you will be expected to assess, analyze, and evaluate complex business applications. In this course you will be assigned an IT client and you will provide consulting services. It will require you to listen to the client and execute a quality assessment of what they need, considering all viable options. The first criteria for a good analysis are the ability to thoroughly and clearly document their work. It is your responsibility to make sure that everything you turn in is clearly labeled and your work processes explained. Refer to class discussion and Canvas for further details regarding these assignments. Also see the following Tentative Class Schedule for the specific assignments and due dates.

Grading criteria for this engagement will be: analysis is cogently executed in and appropriately documented; documentation is thorough and correct, appropriate effort is demonstrated, is appropriately presented, solves actual problems and enables better decision making, etc.

This semester you will be utilizing Alteryx as your software analysis tool. Alteryx is enjoying widespread adoption throughout the accounting profession. It combines many of the functionalities of Tableau with Excel, along with a more robust statistical engine. Since Alteryx has less visualization capabilities than Tableau, feel free to do your analytics in Alteryx and then transfer them to Tableau. My expectation of your team (please no more than 5 people) is that you will upload a link to an .MP4 (do not upload the .MP4 file to Canvas) describing your findings. I’m looking for between 8-10 minutes as you talk to slides or your actual visualizations. This presentation should demonstrate your team’s ability to analyze data and present meaningful insights. Try to have everyone contribute to the video. No floating head required, just screen capture.

Only the video link will be uploaded to Canvas. **When uploading, please put all team member names *and* the video link in the Assignment Comments field.** Keep the Alteryx (and Tableau) files as backup in case I have questions – thanks.

IBM Blockchain Badging (individual work): Permissioned and permissionless blockchains have the potential to severely disrupt the accounting profession. As such, distributed ledger technologies are on the forefront of what graduate students must anticipate as important to their future endeavors. In this class, we will cover

blockchain, and then you will enroll in the IBM Blockchain Essentials self-paced course to earn your blockchain badge. This is a great resume bullet and demonstrates to all future employers your commitment to learning new technologies. The deliverable will be a screen picture of your individual badge with your name (not teamwork) that you will upload to Canvas. **Upon completion, please upload a screen cap of the successful badge.** Blockchain Essentials at: <https://cognitiveclass.ai/courses/blockchain-course/>

RPA (individual work): Robotic Process Automation will severely disrupt the audit profession through client and IT Audit adoption. Knowing the basics of RPA and its implication on consulting and assurance engagements is critical. In this class, we'll explore this new technology with UIPath training and software application. The result of this work will be RPA badging from UIPath (16 hour course) – please upload a screen cap of successful completion:

https://academy.uipath.com/DirectLaunch?cid=pcTERpkX7iM_&io=tpwv6P5Xm0_&md=IS2TIgXikDA_

c. Exams:

Two exams will be given. Be prepared for questions to be both objective (multiple choice, etc.) and discussion. The examination will cover materials from three sources: lecture content, PowerPoints, assigned readings, homework, class discussions and videos assigned. Although, minimal, it is possible that some reading material, for which you are responsible, will not be explicitly discussed in class. The final is not comprehensive.

Late Assignments:

Late assignments will not be accepted after the due date. If you have a documented death in the family, military service, or personal health crisis, inform me or have someone inform me so we can talk.

Missed Exams and Assignments:

You are responsible for taking all exams and assignments at the times indicated. Note: to receive an excused absence on an exam: you must discuss with me personally your reason for requesting to be excused prior to the time of the exam. sufficient support must be presented to verify that you were unable to take the exam at the designated time. if the absence is medically related, a doctor's excuse must be obtained and state that you were ill **ON THE EXAM DAY**. The exact way in which an exam grade is made-up is at the instructor's discretion.

An unexcused absence from an examination or assignment will be recorded as a zero grade. An unexcused absence is one in which a student did not discuss their absence with me **BEFORE** the class time, when the absence does not meet my standards for excused absence or when the student did not provide adequate documentation for the situations which caused them to miss that class.

Use of Your Work:

A portion or all of your solution to an assignment or test question may be placed on reserve at the library or on Canvas as an example of exception quality for your classmates. Such copies will NOT identify the student and will be used only as class examples. If you prefer that I not use your work in this way, please let me know.

Cooperative Learning and Academic Dishonesty:

You are encouraged to study with other students outside of class – cooperative studying

can be an aid to learning. However, all materials turned in and all exams are to be **your own work or that of your assignment teammate**. This means that you may share ideas and solicit suggestions for improving your solution, but the final written product turned in must be your own work. Getting answers from others on any out-of-class assignment, including extra credit assignments such as quizzes, is considered academic dishonesty. *There are two documents on Canvas under the icon titled Plagiarism that should be read the first week of class.* Additionally refer to this website for the UNT policy: <http://vpaa.unt.edu/academic-integrity.htm>

Various methods will be employed by the instructor to prevent (preferably) or detect academic dishonesty. Such methods may include but are not limited to: retaining Xerox copies of scantrons and other assignments, using multiple versions of exams, unidentified observers during exams, and submitting writing assignments to TurnItIn.

ACADEMIC DISHONESTY – additional information

I TAKE CHEATING VERY SERIOUSLY. Students caught cheating or plagiarizing will receive a zero for that particular assignment or exam. Additionally, the incident will be reported to the Dean of Students, which may impose further penalty. According to the UNT catalog, the term "cheating" includes, but is not limited to: a. use of any unauthorized assistance in taking quizzes, tests, or examinations; b. dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; c. the acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the university; d. dual submission of a paper or project, or re-submission of a paper or project to a different class without express permission from the instructor(s); or e. any other act designed to give a student an unfair advantage. The term "plagiarism" includes but is not limited to: a. the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment; and b. the knowing or negligent unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

E-Mail and Internet:

Both E-mail and Internet access will be very important in this class. Many of your class materials will be available through Canvas, which is an internet class management tool. Notes and other class resources may be available only on Canvas. Access to this system will be discussed in class. You should check the class site frequently.

Disabilities Accommodation Policy:

The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see me and/or contact the Office of Disability Accommodation at 940-565-4323 during the first week of class. My office hours and office number are shown on this syllabus. NOTE: University policy requires that students notify their instructor within the first week of class that an accommodation will be requested.

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time, however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability Accommodation website at <http://www.unt.edu/oda>. You may also contact them by phone at [940.565.4323](tel:940.565.4323).

STUDENT PERCEPTIONS OF TEACHING (SPOT)

The Student Perceptions of Teaching Effectiveness (SPOT) is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider the SPOT to be an important part of your participation in this class.

ELECTRONIC DEVICES: Use of electronic devices (e.g., cell phones, smart watches, etc.) is **NOT ACCEPTABLE in this class**. If I discover your use of any of these devices in class, I will stop my discussion/lecture and ask you to put your device away. Beginning with the second instance, this will degrade your P&P grade. I realize many of you can effectively multi-task. However, this type of activity distracts me and affects my ability to lecture. If you have an incoming text you have to reply to, please do so in hallway outside of class or during breaks (thanks). **EXCEPTION:** If you are using your computer, iPad, or similar device to take notes, review the PowerPoint and assist in the learning process that is an acceptable purpose. Please note that checking Facebook/Instagram/YouTube etc. is not considered part of the learning process.

COVID-19 impact on attendance

While attendance is expected as outlined above, it is important for all of us to be mindful of the health and safety of everyone in our community, especially given concerns about COVID-19. Please contact me if you are unable to attend class because you are ill, or unable to attend class due to a related issue regarding COVID-19. It is important that you communicate with me prior to being absent as to what may be preventing you from coming to class so I may make a decision about accommodating your request to be excused from class.

If you are experiencing cough, shortness of breath or difficulty breathing, fever, or any of the other possible symptoms of COVID-19 (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider. While attendance is an important part of succeeding in this class, your own health, and those of others in the community, is more important.

SUCCEED AT UNT

UNT endeavors to offer you a high-quality education and to provide a supportive environment to help you learn and grow. As a faculty member, I am committed to helping you be successful as a student. Here's how to succeed at UNT: Show up. Find support. Take control. Be prepared. Get involved. Be persistent. To learn more about campus resources and information on how you can achieve success, go to <http://success.unt.edu/>. The following are some specific applications of Succeed at UNT for this class. A key to success is persistence.

Emergency Evacuation Procedures for Business Leadership Building:

□ **Severe Weather** In the event of severe weather, all building occupants should immediately seek shelter in the designated shelter-in-place area in the building. If unable to safely move to the designated shelter-in-place area, seek shelter in a windowless interior room or hallway on the lowest floor of the building. All building occupants should take shelter in rooms 055, 077, 090, and the restrooms on the basement level. In rooms 170, 155, and the restrooms on the first floor.

□ **Bomb Threat/Fire** In the event of a bomb threat or fire in the building, all building occupants should immediately evacuate the building using the nearest exit. Once outside, proceed to the designated assembly area. If unable to safely move to the designated assembly area, contact one or more members of your department or unit to let them know you are safe and inform them of your whereabouts. Persons with mobility impairments who are unable to safely exit the building should move to a designated area of refuge and await assistance from emergency responders. All building occupants should immediately evacuate the building and proceed to the south side of Crumley Hall in the grassy area, west of parking lot 24.

Emergency Notification & Procedures:

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). The system sends voice messages (and text messages upon permission) to the phones of all active faculty staff, and students. Please make certain to update your phone numbers at <http://www.my.unt.edu>. Some helpful emergency preparedness actions include: 1) know the evacuation routes and severe weather shelter areas in the buildings where your classes are held, 2) determine how you will contact family and friends if phones are temporarily unavailable, and 3) identify where you will go if you need to evacuate the Denton area suddenly. In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

AMERICANS WITH DISABILITIES ACT (ADA) – additional information

If you are a student who requires accommodations in compliance with the ADA, please consult with me during the first week of the semester. It is your responsibility to inform me of the disability at the beginning of the semester and provide me with documentation authorizing the specific accommodation. UNT's Office of Disability Accommodation (ODA), is responsible for verifying and implementing accommodations to ensure equal opportunity in all programs and activities. You must contact ODA who will instruct you how to proceed. I recognize that any disclosure by a student of their need for accommodation is extremely sensitive. I assure you that all conversations and other communications will be kept protected and confidential and disclosed only on a need-to-know basis.

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time; however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the

student. For additional information see the Office of Disability Accommodation website at <http://www.unt.edu/oda>. You may also contact them by phone at 940.565.4323.

ADA URL

<http://www.unt.edu/oda>

Accounting 5440 – Tentative Semester Schedule

WEEK OF: TOPIC

- 8/21 **Course introduction, what is IT Audit?**
- 8/28 Governance / Introduction to Data Centers
- 9/4 IT Audit Standards, Auditing Databases, Operating Systems
- 9/11 Network Topology and Technology/Disaster Recovery
- 9/18 **Data Centers**
- 9/25 Information Systems Life Cycle
- 10/2 System Implementation and Operations/Data Center Operations Auditing
- 10/9 **Mid-Term Exam** - in class – lockdown browser required, bring/check out a laptop - 65 MC questions – 60 minutes – open notes, open book – no digital media – only paper.
- 10/16 Blockchain technology
- 10/23 Smart Contracts / Crypto
- 10/30 Data Center tour virtual or at Flexential 3500 E. Plano Pkwy, Plano TX 75074 (bring student ID and government-issued ID)
- 11/6 Basics of Cybersecurity Strategy
- 11/13 Artificial Intelligence / SDLC
- 11/20 Thanksgiving Break – enjoy
- 11/27 Alteryx Demo via Zoom – participation from home, do not come to the classroom that day (note - Alteryx assignment due Friday December 8th by 11:50 pm)
- 12/4 Software coding/development – IT Audit future directions
(Alteryx assignment due Friday by 11:50 pm),
Blockchain Badging due same time/date
- Finals week **Final Exam** – date/time TBD – non-comprehensive - in class – lockdown browser required, bring/check out a laptop - 65 MC questions – 60 minutes – open notes, open book – no digital media – only paper.