The University of Texas at El Paso - COBA
Acct 4304: Auditing Principles and Procedures
Spring 2021
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Class Meeting: ONLINE
Office Hours: ONLINE
and by appointment

Course Objectives
The objectives of the course are (1) to introduce the basic concepts underlying an audit of financial statements and an audit of internal control over financial reporting and (2) how to apply those concepts to each type of audit. The course will initially focus on the demand and supply of such services and on understanding the three concepts that underlie the audit process: *materiality, audit risk,* and *evidence*. Next, it will focus on applying those concepts to the different business processes and then will finally cover audit reporting. A systematic approach will be taken with the primary emphasis on understanding ***why*** and ***how*** audits are performed.

Textbook
Messier, W. F., Jr., S. Glover and D. Prawitt. *Auditing and Assurance Services: A Systematic Approach*. Eleventh Edition. New York: Irwin-McGraw-Hill, Inc., 2019. (ISBN 978-259-96944-7).

Case Material: "Artificial Intelligence Algorithms Implemented Ethical Issues in Auditing," By Waymond Rodgers, Salem Al Fayi, Hussen Al-Refiay and James Murray.

Blackboard
The course will be setup on Blackboard Learning System so please ensure that you have access to it. Please check the site on a daily basis as the instructor will use it to communicate any updates, changes and reminders to students between classes.

Learning Environment
This course is designed to provide you with a learning experience similar to the approach you will use when you begin work as an accountant. This experience involves advance reading to understand important concepts followed by interactive discussion about how to apply those concepts in auditing situations. In light of this, student participation in class discussions is a very important element of this course.

Homework Assignments
Students will be expected to complete 11 homework assignments. Theses assignments will be based on material discussed in class and will aim to help students consolidate that material. Homework should be turned in on or before the due dates indicated on the course schedule and penalties will be imposed on late work. Each assignment will be worth 10 points and the 10 highest scores will count towards the final grade.

Classroom Exercises
Students will complete several classroom exercises on random dates to be determined by the instructor. These exercises will be worth a total of 50 points.

Quizzes

Audit Case

The term "AI" describes computing systems that exhibit some form of human intelligence. It covers a number of interlinked technologies including data mining, machine learning, speech recognition, image recognition and sentiment analysis. For instance, machine learning can be used to automatically code accounting entries. By creating sophisticated machine learning-based models, auditors can also improve fraud detection. The audit is set to be further transformed by deep learning, a form of AI that can analyze unstructured data such as emails, social media posts and conference call audio files.

Part of the auditor's task should be ensuring that artificial intelligence (AI) systems conform to the conventions deliberated and established at the societal and governmental level. For this reason, algorithm auditing should ultimately become the purview of a learned (data science) profession with proper credentialing, standards of practice, disciplinary procedures, ties to academia, continuing education, and training in ethics, regulation, and professionalism. Economically independent bodies could be formed to deliberate and issue standards of design, reporting and conduct. Such a scientifically grounded and ethically informed approach to algorithm auditing is an important part of the broader challenge of establishing reliable systems of AI governance, auditing, risk management, and control.

AI Technology is optimizing the audit cycle, increasing speed and accuracy, reducing costs, and ensuring efficient deployment of auditors. Some audit processes that can benefit from the new technologies include:

- **Assessing engagement risks and negotiating deals** — Data analytics can not only help identify client engagement risks but also narrow the scope of work and properly estimate the effort required. This reduces the risk of cost overruns.
- **Planning audits** — Large audits require detailed plans for timelines, resources, scope coverage, location coverage, entity coverage, consolidation work, communication strategy, and risk and mitigation. Data analytics and RPA help finalize the plan and provide a clear vision of the entire audit process and required milestones. Any flaw in the plan can result in the loss of an important material coverage area. Data analytics help identify what is to be covered, while RPA can direct the planning.
- **Performing audit fieldwork** — Analysis and forensics often take a back seat in the current audit process, which is largely manual and focused on extensive data collection. With automation, forensics becomes more important and reduces the risk of noncompliance. AI-powered semantic intelligence compiles large quantities of data and automatically recommends enhancements and remediation of important controls. Control failures are detected in near real time, which allows auditors to flag concerns and enables enterprises to take corrective action before an issue reaches regulators.
- **Identifying exceptional behavior** — With machine learning in place, auditors can identify exceptional behavior in contracts and measure the impacts. They can also plug loopholes that are prone to fraud.
- **Generating reports and analysis** — RPA, combined with analytics and natural language processing, can help generate reports across verticals, locations and entities. It can also provide detailed reports with a user-friendly presentation and highlight areas that need attention.

Students will be expected to complete one comprehensive audit case assignment worth 100 points. This case study will explore the usefulness of machine learning algorithms (see paper: Artificial Intelligence

Algorithms implemented Ethical Issues in Auditing by Rodgers, et al.,) for improving the quality of an audit work. This assignment will test the students' grasp of various auditing concepts and their ability to apply those concepts in a simulated audit setting applying AI concepts. The case will center on "ethical" relations since they are important for effective algorithms for auditing planning, internal controls, audit tests, and risk assessment. In particular, auditors' opinion regarding client's ability to continue in existence is essential to improving social capital in Society. For the background material of the case please refer to: "Artificial Intelligence Algorithms implemented Ethical Issues in Auditing" (2020), by Waymond Rodgers, Salem Al Fayi, Hussen Al-Refiay and James Murray.

Section Exams
There will be two section exams given on the dates listed in the course schedule. Each exam will be worth 50 points, the first will include material covered since the beginning of the semester and the second exam will include material covered since the last exam.

Cumulative Final Exam
The final exam based on the audit case is designed to assess how well students have accomplished the learning objectives for this course. It will be worth 100 points and will be given on the date and time specified by the University's final exam schedule.

Evaluation
The two exams must be worked on until 100% is obtained. Final grades are determined by total points earned at the end of the semester based on the following allocations:

Exam I	100
Exam II	100
Final Project Exam	300
Total	**500**

After all of your points are calculated your letter grade will be determined as follows:

A	450 Points and Higher
B	400-449 Points
C	350-399 Points
D	300-349 Points
F	Less than 300 Points

Attendance (VIRTUAL ONLINE—FLEXIBLE)
Students are expected to arrive to class on time, participate in the class and stay for the entire class period. If you must be absent, leave early for any reason, please inform me beforehand.

Attendance is valued in this class, just as it is in the workplace. Being absent or late to class sends a negative message to the instructor just like it does to an employer, manager, customer or your banker. You cannot make contributions to class discussions when you are not present. **Please keep in mind that missing 1 class is equivalent to 2.5 days of work.**

If you are unable to attend class, you are still responsible for material covered during that class period. Please ask one of your classmates for notes. Requests for 'make-ups' of graded work done during unexcused absences will not be entertained.

*****Very Important: As Per University Policy: "When in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor can drop the student from the class with a W before the course drop deadline or with a grade of "F" after the course drop deadline."**

The instructor reserves the right to raise or lower student's grade based on the quality and quantity of the student's participation.

Academic Integrity

The University of Texas at El Paso prides itself on its standards of academic excellence. In all matters of intellectual pursuit, UTEP faculty and students must strive to achieve excellence based on the quality of the work produced by the individual. In the classroom and in all other academic activities, students are expected to uphold the highest standards of academic integrity. Any form of scholastic dishonesty is an affront to the pursuit of knowledge and jeopardizes the quality of the degree awarded to all graduates of UTEP. It is imperative, therefore, that members of this academic community understand the regulations pertaining to academic integrity and that all faculty insist on adherence to these standards.

Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the *Handbook of Operating Procedures* (HOP) available in the Office of the Dean of Students, may result in sanctions such as disciplinary probation, failing grades on the work in question, failing grades in the course, and suspension or dismissal, among others.

Specifically, the submission for credit of computer prepared assignments (Word, Excel, Access, etc.) completed by others, either in previous semesters, or by other members of the class in this semester will be dealt with in the severest possible manner. The mere suspicion of such activities will result in referral to the Dean of Students, with recommendation for the severest possible sanctions, if found guilty.

Course Repeat Policy

The university has adopted a policy that limits undergraduate course enrollment. The policy was implemented in the Fall semester of 1995. Courses taken before Fall 1995 will not count as enrollments in meeting the maximum three enrollments in a course. As noted, individual colleges may have more restrictive policies. The university policy is as follows:

Limits on Undergraduate Course Enrollment.

In most instances a student may enroll in an undergraduate class a maximum of three times, except with the permission of the student's academic dean. A student may enroll more than three times in a variable topic, studio, performance, workshop or other course that is identified as 'may be repeated for credit.' This includes enrollments that result in a grade of 'W', 'F', 'D', or 'P'. It does not apply to courses taken prior to the students' re-enrolling under 'Option 2' or Readmission After Extended Absence. Individual colleges may have more restrictive policies. The College of Business Administration instituted a "3 time" enrollment limitation in the spring of 1993. Business courses taken that semester or later are subject to this rule.

A student may not enroll in a course in which a grade of 'C' or higher has been previously earned) except for a variable-topic, studio, performance, workshop or other course that is identified as 'may be repeated for credit'). Moreover, a student may not enroll in a course in which he or she has an unresolved grade of 'I'.

As of the 2005 fall semester, the university has instituted a surcharge of $100 per course hour, for any course the student enrolls in for the third time.

Withdrawal Policy
The last date that you may drop the course with an automatic "W" is Monday, October 30, 2016. After that date, students must be dropped from a course with a mandatory grade of "F." A grade of "W," after that date may be assigned only under exceptional circumstances, and only with the approval of the instructor, the department chair and academic dean. The student must petition for the "W" in writing and provide the necessary supporting documentation. Please note that if you can no longer continue in the course, for whatever reason, it is your responsibility to withdraw from the course.

Students with a Disability
If you feel you may have a disability that requires accommodations, contact the
The Center for Accommodations and Support Services (CASS) Office at 747-5148, or go to the Union Bldg., East, Room 106, or email cass@utep.edu.

Statements on Faculty and Student Responsibilities
Statements on faculty and student responsibilities may be found on the College of Business website at: http://business.utep.edu/About/responsibilities.aspx.

Cell Phones
• Set your phone to mute or silent mode before coming to class.
• Do not answer incoming calls or make outgoing calls while in class.
• Do not use text messaging or web browser features while in class.

NOT APPLICABLE FOR THIS SEMESTER: Class Policy for Electronic Devices: All electronic devices (cell phones, laptops, camera containing devices, etc.) should be completely turned off in class and should not be in the hands of students at any point during class. Professor reserves the right to temporarily confiscate electronic devices owned by students when electronic devices are either not switched off or are found in the hands of students. All students are expected to comply. Students will be penalized for noncompliance. NO TEXTING ALLOWED.

Other
This syllabus is subject to change. Any changes will be announced in class and posted to the Blackboard web site.

Course Schedule

Week & Date	Discussion Topic	Reading/Assignment
1. 1-19-21	Course Introduction 1.1 Introduction to Assurance services	Pages 3-24, 35-44 **Assignment 1:** Read AI & Accounting

Week & Date	Discussion Topic	Reading/Assignment
2. 1-26-21	1.2 Auditing Standards and Professional conduct 1.3 Independence and Objectivity	Pages 50-58 Pages 640-660 **Assignment 2:** Read: "Artificial Intelligence Algorithms Implemented Ethical Issues in Auditing," By Waymond Rodgers, Salem Al Fayi, Hussen Al-Refiay and James Murray.
2-2-21	1.4 Audit Planning 1.5 Risk Assessment	Pages 67-88 Pages 97-118 Video recordings
2-9-21	1.6 Audit Evidence 1.7 Audit Documentation	Pages 127-145 Pages 144-163 **Assignment 3:** See TABLE 1: ARTIFICIAL INTELLIGENCE—AUDITING EFFECTS Video recordings
2-16-21	1.8 Internal Control and Audit Strategy 1.9 Internal control over Financial Reporting	Pages 175-207 Pages 217-246 Video recordings
2-23-21	1.10 Audit Sampling I 1.11 Audit Sampling II	Pages 259-286 Pages 297-325 Video recordings
3-2-21	**Exam I**	**None**
3-9-21	1.12 Artificial Intelligence & Auditing 1.13 Artificial Intelligence & Auditing	
3-16-21	SPRING BREAK	

Week & Date	Discussion Topic	Reading/Assignment
3-23-21	2.1 Auditing the Revenue Process 2.2 Auditing the Purchases process	Pages 335-371 Pages 383-410 Video recordings
3-30-21	2.3 Auditing the Human Resources Process 2.4 Auditing Cash and Investments Artificial Intelligence Issues	Pages 419-438 Pages 524-547 **Assignment 4:** See TABLE 2: AI Exogenous (Secondary) Measurement Examples Video recordings
4-06-21	2.5 Auditing Inventory 2.6 Auditing Assets Artificial Intelligence Issues	Pages 447-467 Pages 477-494 **Assignment 5:** See TABLE 3: AUDIT PRODUCTION LINE Video recordings
4-13-21	**Exam II**	
4-20-21	2.7 Auditing Liabilities, Equity 2.8 Completing the Audit Artificial Intelligence Issues	Pages 503-516 Pages 559-582 Video recordings
4-27-21	Artificial Intelligence Issues 2.9 Audit Reports 2.10 Auditor Liability	Video recordings
5-06-21	**FINAL PROJECT DUE**	

Artificial Intelligence and Auditing Project Assignment

Summary

Introduction:

Accounting and auditing has experienced many changes due to the arrival of artificial intelligence (AI) tools. Technology advancements are accelerating the work processes of accounting and finance. According to the market, the global workforce has a major concern that AI-powered machines will replace their jobs in the future.

Generally, the role of auditing professionals is to make strategies to detect and prevent material misstatements to the financial statements as well as safeguard assets (i.e., tangible and intangible assets). Further, the role of auditing experts in business is to assist in understanding and interpreting internal control systems of an organization. AI technologies like Machine learning (ML) and deep learning assist auditing professionals to perform their tasks more efficiently.

My study will examine how AI impacts on accounting (INDICATE THE AUDITING PROCEDURES THAT YOU WILL EXAMINE). Further, I will describe in a decision-making model (called the Throughput Model, how perception (framing of the problem), information (financial and non-financial information, judgment (analysis of perception and information) influences actions in implementing AI (i.e., decision choice). Moreover, this study incorporates ethical algorithms, which relates to transparency and corporate governance.

Literature Review
Methods (can be qualitative or quantitative)
Analysis
Conclusions