

USC Marshall School of Business

ACCT 548L: IT AUDIT AND DATA APPLICATIONS

Spring 2023

Section # 14236D Lecture (3 Units)

Lecture: Tue/ Thu – 2.00-3.20 PM (JKP 104) and Lab: Fri – 09.30-10.50 AM – Online

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Office Hours: *Tuesday and Thursday 9- 10 AM (Zoom) and by appointment*
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COURSE DESCRIPTION

Welcome to IT Audit and Data Application! This course allows graduate level accounting students to explore the role systems play in organizations, the technology that supports these systems and issues relating to technology risk, system/application security and system review/audit.

Use of sophisticated technology and data analytics in the audit field is fast becoming a standard operating practice. Technology is efficient and effective at helping auditors organize their data and enables more informed and timely decisions. The pandemic has shown that the benefits of technology are accelerating, and firms that don't embrace the digital revolution will be left behind. One of the biggest benefits of using technology and data analytics in the audit is the elimination of constraints that sampling places on an engagement. Data analytics gives practitioners the ability to analyze an entire population of data for anomalies, trends, and areas of risk.

The gain a deeper understanding of the importance of IT Audit and Data Applications this course is divided into three areas of focus: (1) the importance of auditing, internal control and information security to ensure corporate IT governance; (2) computer assisted audit tools and data analysis to support auditors decision making; and (3) the application of IT audit procedures to understand business processes. Additionally, a co-requisite to ensure a great learning experience is ACCT 541L – Enhanced Auditing in the Data Age.

COURSE OBJECTIVES

Upon completion of this course, you should be able to:

1. Describe and apply industry guidance for IT auditing and using data analytics (LO 1,2, and 5)
2. Understand the IT general computer control environment and relevant controls LO 1, 4 and 5)
3. Recognize the risks related to information security and systems integrity (LO 1,3,4, and 5)
4. Analyze audit concepts including, but not limited to, integrity of data inputs, data security, data privacy, and data quality (completeness, accuracy, availability, etc.) Describe how auditors collect, prepare, analyze, use and communicate data as audit evidence (LO 2, 4 and 5)
5. Apply IT audit procedures using industry-leading tools (LO 2 and 4)
6. Analyze results of audit procedures to determine risks to an organization's internal control structure and the ramifications to the financial statements (LO 1,3 and 6)
7. Argue how digital transformation is changing the audit profession (LO 4,5, and 6)

See Appendix 1 for a full description of the USC Marshall MAcc D+A Learning Objectives.

COURSE MATERIALS

The following book is available in the bookstore and online:

- Hall, J.A. (2016) *Information Technology Auditing*. 4th Edition. Cengage Publishing.
The required textbook can be obtained from the USC bookstore or through Cengage. Here you can access [Cengage Unlimited four-month subscription](#) along with options to rent a hard copy.
- Copies of lecture slides and other class information will be posted on Blackboard. If you have any questions or need assistance with the Blackboard Course Pages, please contact the Marshall HelpDesk at 213-740-3000 (option 2) or HelpDesk@marshall.usc.edu. Alternatively, (213) 740-5555 will get you the USC ITS Help Desk.
- Additionally, you will need access to a computer (either PC or Mac) to complete the exercises and project in this course.

GRADING

Your grade in this class will be determined by your relative performance on a mid-term and final exam, project, presentation and class participation. The total class score will be weighted as follows:

GRADED ELEMENTS	Possible Points	% of Grade
<i>EXAMS</i>		
Mid-Term Exam (on Thursday 2/16)	250	25%
Final Exam (on Thursday 5/4)	300	30%
<i>GROUP CASE write up/ analysis</i>	400 (total)	40% (total)
Case 1 – week 5	- 100	- 10%
Case 2 – week 9	- 100	- 10%
Case 3 – week 13	- 100	- 10%
Case 4 – week 16	- 100	- 10%
<i>PARTICIPATION</i>	50 (total)	5% (total)
TOTAL	1000	100%

Final grades represent how you perform in the class relative to other students. The average grade for this class is expected to average about 3.3 on a 4-point scale (i.e., B+). After each student's weighted total points are determined for the semester, letter grades will be assigned on a curve according to Leventhal School of Accounting grading guidelines. Three items are considered when assigning final grades:

1. Your average weighted score as a percentage of the available points for all assignments (the points you receive divided by the number of points possible).
2. The overall average percentage score for the course.
3. Your ranking among all students in in the same course(s) taught by your instructor during the current semester

EXAMS

There is one scheduled midterm exam which is worth 250 points 25% of the total available points. The midterm will be held on 2/16 2023 **during normal class time**. The midterm exam may cover any topic that was discussed during lecture, is depicted in the lecture slides, is a concept in the textbook or other advanced preparation materials.

The **Final Examination** covers material after the midterm, and is worth 300 points, 30% of the total available points. The final exam will be held on Friday, 5/4, 2023, **during normal class time**. Final exam scores are final when posted to Blackboard

Exams may include: multiple-choice questions, short answer questions, problems, and exercises, and other appropriate questions designed to measure the learning progress and mastery of the subject matter

Preparing for exams involves dedication and ends only when you can: 1) identify the relevant issues in a given business situation; 2) describe the data and transform it into information to be used in a comprehensive answer; and 3) explain what you did using techniques demonstrated in class. The best bet for success involves a number of steps. First, is making sure you do the advanced preparation for each class session. Second is reworking homework problems and cases done in class and trying other / additional problems. Third is making sure you ask questions in a real-time manner to solidify your understanding of the material as we go, rather than trying to 'get it' right before an exam. Remember, on exams you will be required to perform all work (*e.g., problem setup, solution generation, and answer presentation*) on your own.

During the semester, each exam will be returned no more than one week after it has been given. After each test is returned there is a one-week reflection period and then you will have one week to discuss your grade. Please be aware this discussion may result in an increase, decrease or no change to your score. After this time, grades on tests become final. All other grades are final once given.

The Leventhal School of Accounting policy is exams should not be missed unless there is a very serious emergency AND it can be properly documented. Also, to the extent possible, you must inform the instructor of the emergency prior to the exam (it is understood this is not always possible). If you miss an exam for something other than a serious emergency and / or you cannot provide documentation, you will receive a zero grade for the exam. If there is a serious emergency, you can provide proper documentation and (when possible) have notified me before the exam, a substitute grade will be calculated based on the normalized average of your remaining future exams. Any final exam must be taken at the scheduled time unless an incomplete contract has previously been approved according to Leventhal School of Accounting guidelines.

4 CASE WRITE-UPS

To ensure your accounting systems knowledge is comprehensive, the class structured around cases. In the cases you'll practice your IT audit and data analysis skills. The case write-ups can be done teams of up to 5 people. Each team must turn in all four of the cases from the course outline marked with an asterisk. Each of the four cases will carry a weight of 10% toward your course grade. Case write-ups should be no longer than three typed pages, with no more than four supporting pages of tables or analysis. Students select their own teams and we will organize team membership during our first meeting. Case write-ups should be turned in online via Blackboard. More detailed instructions will be provided in class.

CLASS PARTICIPATION

Class participation is an extremely important part of the learning experience in this course as the richness of the learning experience will be largely dependent upon the degree of preparation by *all* students prior to each class session.

A course that incorporates the frequent use of case analyses to illustrate the practical application of concepts and practices requires the student to diligently and thoroughly prepare cases and actively offer the results of the analyses and conclusions derived as well as recommendations during each class session. My expectation and that of your classmates are that you are prepared for *all* classes and will actively participate in and meaningfully contribute to class discussions.

In-class participation is also a critical part of this course's learning experience. Cold calling may take place to encourage active participation and to gain multiple perspectives and points of view, thus lending itself to the richness of the learning experience. In-class participation grading will be based on students' demonstrated willingness to participate and the quality of the comments expressed, rather than quantity. While some students are far more comfortable than others with class participation, *all* students should make an effort to contribute meaningfully.

CLASSROOM POLICIES - SPRING 2023

1. Active class participation is important in achieving the learning objectives for this course. Unless students provide an accommodation letter from USC OSAS or from Marshall detailing visa or travel restrictions, attendance and active participation is expected in the classroom.
2. Any student with such accommodations should submit their accommodation document to their instructor as soon as possible. Your instructor will then provide regular access to a recording of the class and an opportunity to regularly make up missed in-class participation.
3. Students who are experiencing illness should not attend class in person. Please inform the instructor in advance of the class session to discuss what accommodations will be made to allow for the make-up of missed class work and missed in-class participation. Students will not be penalized for not attending class in person under these circumstances.

In-class participation is 5 % of the total grade and evaluated based on your level of involvement in the class. One of the primary goals of this course is to help you develop the ability both to clarify your own position on an issue and to be able to articulate and defend it clearly. Sharing your perceptions and ideas with others is crucial for learning and for understanding how the diverse opinions that you are likely to encounter in an organization are debated. You will find yourself presenting and testing new ideas that are not wholly formulated and assisting others in shaping their ideas as well. You should be prepared to take some risks and be supportive of the efforts of others.

Effective class participation consists of analyzing, commenting, questioning, discussing, and building on others' contributions; it is not repeating facts or monopolizing class time. The ability to present one's ideas concisely and persuasively and to respond effectively to the ideas of others is a key business skill. One of the goals of this course is to help you sharpen that ability.

- **Outstanding Contribution:** Your contributions reflect considerable preparation; they are substantive and supported by evidence from the case, readings, and logic. Your comments or questions create a springboard for discussion by making a critical insight. You synthesize and build upon what has already been said in the discussion. The class learns from you when you speak; in your absence, the discussions would suffer.
- **Good Contribution.** You come prepared with substantiated comments. You demonstrate good insight and clear thinking. You are able to make some connection to what has been said in prior discussion. The class notices when you're not part of the discussion.
- **Minimal Contribution.** You participate but are unprepared. You rarely offer interesting insights into the discussion. It appears that you are not listening to what others are saying during discussion.
- **No Contribution.** You say little or nothing in class. If you were not in the class, the discussion would not suffer.

Collaboration policy (for non- exam assignments).

Students are permitted and encouraged to discuss with others their ideas for completing assignments (e.g. homework and project); however, once a student begins writing the deliverable, all work must be individual and independent. Students may not seek help from anyone outside the class, including but not limited to former students of this course, friends and family, tutors, and online forums. Students may consult

course materials and web resources. Students may not post anything related to the assignments online. Failure to abide by the above guidelines may constitute a case of suspected plagiarism or cheating, which will be reported and investigated. Please see the “Academic Integrity and Conduct” section below for further details. For more information about unauthorized collaboration, visit <https://libraries.usc.edu/tutorial/academic-dishonesty> or http://lib-php.usc.edu/tutorials/academic-dishonesty/story_html5.html.

THE IMPORTANCE OF COURSE EVALUATIONS

The student course evaluations are valuable. This course is continuously improved, based on feedback from students and instructor observations.

TECHNOLGY REQUIREMENTS

This course will use technology extensively. There will be some class sessions that require students to bring personal computers for use in the class as we learn various technology tools. Additionally, I will periodically employ polling technology that will require a response through a computer or mobile.

Technologies we will be using are:

- Tableau <https://itservices.usc.edu/adminsystems/tableau/>
- Microsoft Excel <https://itservices.usc.edu/office/>
- Microsoft Access <https://lab.marshall.usc.edu>
- SAS <https://welcome.oda.sas.com/login>
- Microsoft Visio <https://cloudapps.usc.edu>
- [Alteryx](#)

We will go over in class on how to download/ access the technologies.

CLASS CONDUCT/NETIQUETTE

Professionalism will be expected at all times. Because the university classroom is a place designed for the free exchange of ideas, we must show respect for one another in all circumstances. We will show respect for one another by exhibiting patience and courtesy in our exchanges. Appropriate language and restraint from verbal attacks upon those whose perspectives differ from your own is a minimum requirement. Courtesy and kindness is the norm for those who participate in my class.

Our discussion board is a way for you to share your ideas and learning with your colleagues in this class. We do this as colleagues in learning, and the Discussion Board is meant to be a safe and respectful environment for us to conduct these discussions.

Some Netiquette Rules:

- Dress respectfully. Video conference business meetings are and will be the norm, so practice your professional telepresence.
- Virtual background respectfully professional
- Display both your first and last name during video conferencing and synchronous class meetings.
- Respectfully minimize distractions with muting and video off when moving around
- Disagree respectfully
- Respectfully pay attention to classmates
- Do not use all CAPITAL LETTERS in emails or discussion board postings. This is considered "shouting" and is seen as impolite or aggressive.
- Do not use more than one punctuation mark, this is also considered aggressive!!!!

- Begin emails with a professional salutation (Examples: Dr. Name; Ms. Name; Hello Professor Name; Good afternoon Mr. Name). Starting an email without a salutation or a simple "Hey" is not appropriate.
- When sending an email, please include a detailed subject line. Additionally, make sure you reference the course number (Ex. BUAD306) in the message and sign the mail with your name.
- Use proper grammar, spelling, punctuation, and capitalization. Text messaging language is not acceptable. You are practicing for your role as a business leader.
- Re-Read, think, and edit your message before you click "Send/Submit/Post.". as a check, consider whether you would be comfortable with your email or post or text being widely distributed on the Internet.

COURSE OUTLINE AND ASSIGNMENTS

Week	Dates	Focus	Main Topic	Sub-topic	Readings	Group Case	Lab
1	10-Jan 1/12 online	IT Audit and Control	Overview of IT Auditing	Course Introduction Market Game	Ch. 1		NO
2	17-Jan 19-Jan		Auditing IT Governance Controls - 1	IT Governance Basics of ITGC controls	Ch. 2 and ITGC handout 1		20-Jan
3	24-Jan 26-Jan		Auditing IT Governance Controls - 2	Evaluating ITGC controls	Ch. 2 and ITGC handout 2		27-Jan
4	31-Jan 2-Feb		Auditing IT Governance Controls - 3	Audit response to ineffective ITGCs	Ch. 2 and ITGC handout 3		3-Feb
5	7-Feb 9-Feb		Auditing IT Governance Controls - 4	Comprehensive Case Study	Ch. 2 and Case Study	Wembley Wheels	10-Feb
6	2/14 online 16-Feb			Review MIDTERM			NO
7	21-Feb 23-Feb	IT Audit and Security	IT Audit and Security - 1	Cybersecurity 1	Ch. 3 and security handout 1		24-Feb
8	28-Feb 2-Mar		IT Audit and Security - 2	Cybersecurity 2	Ch. 4 and security handout 2		3-Mar
9	7-Mar 9-Mar		IT Audit and Security - 3	Comprehensive Case Study	Ch. 4 and case study	Liberty Data Systems	NO
10	14-Mar 16-Mar		Spring Recess (3/12- 3/19)				NO
11	21-Mar 23-Mar	IT Audit and Technology	Audit and Technology - 1	Process Mining	Ch. 5		24-Mar
12	28-Mar 30-Mar		Audit and Technology - 2	Bots	Ch. 6		NO
13	4-Apr 6-Apr		Audit and Technology - 3	Comprehensive Case Study	Ch. 7	Celonis case	NO
14	11-Apr 13-Apr	IT Audit and Judgement	Ethics		Ch. 12		14-Mar
15	18-Apr 20-Apr		Fraud				NO
16	25-Apr 27-Apr		DEI	Comprehensive Case Study		The 360	28-Apr
17	4-May			Study Days 4/29 - 5/2 FINAL EXAM (2 - 4 PM)			

Changes to the syllabus. The faculty reserves the right to make changes to the course syllabus and course calendar. In the event that changes become necessary, students will be notified through Blackboard email and announcement.

ADDITIONAL INFORMATION

Retention of Graded Coursework

Final exams and all other graded work which affected the course grade will be retained for one year after the end of the course *if* the graded work has not been returned to the student. If I returned a graded paper to you, it is your responsibility to file it.

Technology Policy

Laptop and Internet usage is not permitted during academic or professional sessions unless otherwise stated by the respective professor and/or staff. Use of other personal communication devices during academic or professional sessions is considered unprofessional and is not permitted. ANY e-devices (cell phones, tablets, other texting devices, laptops) must be completely turned off during class time. Upon request, you must comply and put your device on the table in off mode and FACE DOWN. You might also be asked to deposit your devices in a designated area in the classroom. Videotaping faculty lectures is not permitted due to copyright infringement regulations. Audiotaping may be permitted if approved by the professor. Use of any recorded or distributed material is reserved exclusively for the USC students registered in this class. Exceptions to this policy may be granted to individual students with appropriate documentation on a case-by-case basis.

Use of Recordings

Pursuant to the USC Student Handbook (www.usc.edu/scampus, Part B, 11.12), students may not record a university class without the express permission of the instructor and announcement to the class. In addition, students may not distribute or use notes or recordings based on University classes or lectures without the express permission of the instructor for purposes other than personal or class-related group study by individuals registered for the class. This restriction on unauthorized use applies to all information that is distributed or displayed for use in relationship to the class.

STATEMENT ON ACADEMIC CONDUCT AND SUPPORT SYSTEMS

Academic Conduct:

Students are expected to make themselves aware of and abide by the University community's standards of behavior as articulated in the [Student Conduct Code](#). Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct at <http://policy.usc.edu/scientific-misconduct>.

Students with Disabilities

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call. suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call. studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - (213) 740-5086 eeotix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298. usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - (213) 740-0776. osas.usc.edu
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - (213) 821-4710 campussupport.usc.edu Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity and Inclusion - (213) 740-2101. diversity.usc.edu
Information on events, programs and training, the Provost’s Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu. Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu. Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
ombuds.usc.edu A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

Occupational Therapy Faculty Practice - (323) 442-3340 or otfp@med.usc.edu
chan.usc.edu/otfp Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.

Emergency Preparedness/Course Continuity

In case of a declared emergency if travel to campus is not feasible, the *USC Emergency Information* web site (<http://emergency.usc.edu/>) will provide safety and other information, including electronic means by which instructors will conduct class using a combination of USC's Blackboard learning management system (blackboard.usc.edu), teleconferencing, and other technologies.

For additional information, you may use any of the following

- USC Emergency UPC Phone – (213) 740-4321
- Download LiveSafe Mobile Safety App – <https://dps.usc.edu/services/safety-app/>
- Sign up for TrojansAlert – <https://member.everbridge.net/index/892807736725448#/login>

Appendix I Marshall Program Learning Outcomes

Student Learning Outcomes for Masters of Accounting with Emphasis in Data and Analytics

1. **Technical, Conceptual, Problem-Solving**
Students will be competent in and be able to apply discipline-specific knowledge and skills in the fields of accounting, auditing and data analytics. This learning outcome includes the development of critical thinking and problem solving skills, as well as an understanding of the strategic role of accounting in business organizations and society.
2. **Applied Data Analytics**
Students will be able to analyze business and audit objectives, issues and problems and identify the data necessary for solutions. They will learn to integrate data tools and languages and communicate the answers in pragmatic and understandable terms. Students will learn to be effective in unstructured environments and productive in live business situations
3. **Professional Development**
Students will be able to communicate clearly, and strategically, after considering the relevant audience, situation, and purpose of the communication. Students will demonstrate the ability to work productively with others to accomplish established goals.
4. **Research/Life-Long Learning**
Students will be able to use relevant research databases and academic/professional literature to gain new knowledge and analyze business situations.
5. **Ethical Principles and Professional Standards**
Students will be able to apply ethical principles and professional standards in analyzing situations and making informed decisions.
6. **Globalization**
Students will be able to demonstrate an international perspective and appreciation for diversity and cultural differences, along with their significance in global business.

