

THE UNIVERSITY OF TEXAS AT AUSTIN
MIS373 INFORMATION TECHNOLOGY AUDIT & SECURITY
FALL 2013
Unique#: (04045)

VERSION: 8/27/2013

Instructor	:	Huseyin Tanriverdi, Associate Professor
Class times	:	Monday / Wednesday 11am-12:15pm
Class location	:	UTC 3.124
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Course objectives:

This course makes an introduction to information technology (IT)-related risks of organizations, IT governance and control frameworks, and IT audit and advisory services aiming to reduce IT-related business risks and increase returns of organizations. IT has become a critical enabler and transformer of business innovation, growth, and profitability across almost all sectors of the economy. IT has also exposed organizations to greater risks. Academic and practitioner literatures are fraught with cases showing how misalignment of IT and business strategies, inadequate investments in IT, failures in IT implementations, glitches in IT operations, or IT security breaches can significantly affect the confidentiality, integrity, and accessibility of information assets, disrupt business operations, lead to financial losses, and cause damage to reputations of organizations. Pervasiveness of IT systems across value chains and business networks of organizations increases the importance of IT-related controls. Regulations such as the Sarbanes-Oxley (SOX) regulation of 2002 require top executives of public companies to be directly responsible for IT-enabled internal controls that impact financial statements of their companies. Thus, it is important for business leaders to understand how they can minimize risks and maximize returns of IT to obtain more favorable risk-return positions for their organizations. This course aims to equip students with an understanding and appreciation of the following topics:

- IT environments, IT functions, IT assets and terminology of organizations
- Different types of business and IT risks faced by organizations
- The roles of IT in risks, returns, and risk-return trade-offs of organizations
- Governance and control frameworks that aim to mitigate IT-related organizational risks
- IT audit process, generally accepted IT audit standards, frameworks, and methodologies
- IT general controls, IT application controls, identity governance and access controls
- Data privacy controls
- Security governance
- Computer Aided Audit Tools & Technologies (CAATs)
- IT audit and advisory services provided by the accounting industry
- IT-related risks and mitigation approaches in corporate outsourcing, merger, acquisition, divestiture, spinoff, and split-up transactions
- Professional organizations and certifications relevant to IT audit and security

Course delivery format:

The course material is delivered through lectures, guest lectures, case discussions, industry-sponsored projects and hands-on application assignments. Students are encouraged and expected to participate actively in class discussions and presentations. They are expected to read and analyze assigned reading articles, cases, and lecture and guest speaker notes in advance of class and come to class prepared for discussions. Through participation in class discussions, students control and share the responsibility for learning.

Course website:

Hosted on the Blackboard system <http://courses.utexas.edu/>. Login using your UT EID and select MIS373. Updates to this syllabus and other course materials will be posted on this website. Please log on to the site before each class to view the announcements and assigned materials.

Required cases and reading materials:

Required cases and reading materials for each session are listed in the course schedule below.

- **(HP):** Harvard Business School cases and articles that we will use in this class are available in a digital Harvard Package (HP), which can be purchased online from Harvard Business School Publishing at <https://cb.hbsp.harvard.edu/cbmp/access/20795435>
- Non-Harvard cases and readings will be available on Blackboard.

Grading:

Contributions to in-class discussions	: 15%
CAATTS Assignment	: 15%
Industry-sponsored team project	: 40%
Take-home final	: 30%
Total	: 100%

Contributions to in-class participation (15%). This class relies significantly on case discussions and guest speaker presentations. Students are expected to actively contribute to the learning of their peers by asking relevant questions, making relevant comments, and sharing their own perspectives on issues being discussed in cases and presentations. Attendance is required, but it earns only 50% of the in-class participation credits. The remaining 50% of the in-class participation credits can be earned by making contributions to discussions in the classroom.

There is no substitute or make-up for earning in-class participation credits. Requests to do extra work in lieu of participation will be automatically declined. If you miss the opportunity to contribute to in-class discussions in a session, you can try to make up for it by increasing your participation levels in other sessions you are able to attend throughout the semester. Your final participation grade will be assigned based on your participation patterns throughout the semester.

Advanced preparation for in-class discussions would help you make substantive contributions to in-class discussions. You are expected to read, analyze, and think about the assigned readings, cases, and other lecture materials before coming to class. This preparation is likely to increase your ability to make substantive contributions to in-class discussions and earn participation credits.

Please consult the following note in the Harvard Package (HP) for guidance on how to prepare for a case discussion: Ellet, W. "How to Discuss a Case" Chapter 8 of "The Case

Study Handbook: How to read, discuss, and write persuasively about cases. Harvard Business Press," Product#: 2450BC-PDF-ENG, Apr 17, 2007, pp. 1-12.

The following factors will contribute positively to earning in-class participation credits:

- Doing assigned readings and cases and coming to class prepared for discussing them
- Arriving before the start of class and staying until the end
- Listening actively to your peers, instructor, and guest speakers
- Asking relevant questions
- Linking and synthesizing topics covered throughout the semester
- Bringing to discussions examples and questions from your prior work experiences
- Synthesizing or reconciling issues being discussed
- Responding to questions
- Disagreeing with others constructively
- Neither dominating the conversations nor being too quiet
- Exhibiting a good sense of humor

Using a name card and sitting roughly in the same place each class will help instructor and other students better recognize your contributions.

CAATTS Assignment (15%): You will work on a team assignment to gain hands-on experience with one computer assisted audit tool and technology (CAATTS), namely the ACL software. This software is available in business school labs. Course TA will provide a tutorial on ACL on October 14th in the Mod Lab, as listed in the course schedule below. After this tutorial, you will be given a CAATTS team assignment. You will be asked to form teams and inform the course TA about your team members as soon as you can, but no longer than the end of the ACL tutorial on October 14th.

Industry Sponsored Student Team Project (40%): Your in-class learning will be applied hands-on in a semester long, industry-sponsored team project. You will be asked to form teams and work on a topic that is perceived to be an interesting new phenomenon, technology, a major challenge, or a major opportunity in the IT audit and advisory services industry. The instructor and professionals from the industry defined several projects in advance of the semester. Descriptions of those projects will be shared with you on the first class day. You will form teams and select projects by the second class day. Professionals sponsoring the projects will provide advice and guidance to the teams throughout the semester. There will be three graded components of the project:

- (1) Intermediate deliverables
 - Project proposal (5%)
 - Project status report (5%)
- (2) Final deliverable
 - Presentation (15%)
 - Report (15%)

A project guidelines document explaining objectives, expectations, milestones, and deliverables of the project will be posted on the course website. The final deliverables will be evaluated by an independent judge panel formed by the Austin Chapter of ISACA (Information Systems Audit and Control Association). All members of the team will receive the same project grade. At the end of the semester, you will evaluate contributions of your team members using peer evaluation forms. Individual grades may be adjusted up or down for team members who made significantly above-average or significantly below-average contributions to team assignments and projects.

Take home final exam (30%): A take home final will be given at the end of the semester. The final exam will be cumulative of all the material covered throughout the semester. Your solutions to the take home final will be due by 12:30pm on December 6th in the digital drop-box of the Blackboard course management system. Please see the submission guidelines to be posted on the course website. Late submissions will incur a deduction of 10 points for each hour of lateness after the due time.

Final letter grades: Weighted average of all grade components will be used in assigning final letter grades. If the class average turns out to be below 90, letter grades will be assigned based on a curve. The curve will not have predetermined percentages. Breaks in grade distribution will be used in setting letter grade boundaries. If the class average turns out to be 90 or above, the following table will be used in converting weighted grade averages to final letter grades.

Grade conversion table to be used if class average is 90 or above	
Range of weighted grade average	Letter grade
95-100	A
90-94	A-
85-89	B+
80-84	B
75-79	B-
70-74	C+
65-69	C
60-64	C-
55-59	D+
50-54	D
45-49	D-
00-44	F

BEST PROJECT AWARDS

Austin Chapter of ISACA (Information Systems Audit and Control Association) will select the best project based on the final deliverables. The student team producing the best project will receive a monetary prize of \$500 and team members will be recognized during a monthly meeting of the Austin Chapter of ISACA.

ISACA (Information Systems Audit and Control Association). I encourage you to become student members of ISACA. Joining ISACA will provide access to a wealth of resources about the topics we cover in our class discussions. With student membership, you will gain access to articles in the Information Systems Control Journal, various IT audit & security toolkits, discounts on ISACA certifications (CISA, CISM), events, conferences, etc. Joining ISACA will also open the door to making connections with people around the globe who are currently working, and hiring for positions ranging from IT security, audit, control, risk, privacy, compliance, and advisory services. To learn more, please check out www.isaca.org/student.

KnowledgeLeader. I also encourage you to subscribe (free of charge) to Protiviti's KnowledgeLeader website. It provides many useful resources for the course and your projects (e.g., audit programs, tools, resources and best practices to help busy professionals save time and stay on top of business and technology risks). In addition, KnowledgeLeader offers the University Center for professors and students - containing entry-level internal audit and risk management content, career resources, and day-in-the life profiles. You should follow this link to activate your account: <http://www.KnowledgeLeader.com/KnowledgeLeader/Registration.nsf/Registration2!OpenForm&AccountType=Group%20Special&AccountSubType=University%20Program>

Confirmation Number is: UNI8999112. You will then be prompted to create a user name and password.

McCombs Classroom Professionalism Policy

The highest professional standards are expected of all members of the McCombs community. The collective class reputation and the value of the Texas BBA experience hinges on this.

Faculty are expected to be professional and prepared to deliver value for each and every class session. Students are expected to be professional in all respects.

The Texas BBA classroom experience is enhanced when:

- **Students arrive on time.** On time arrival ensures that classes are able to start and finish at the scheduled time. On time arrival shows respect for both fellow students and faculty and it enhances learning by reducing avoidable distractions.
- **Students display their name cards.** This permits fellow students and faculty to learn names, enhancing opportunities for community building and evaluation of in-class contributions.
- **Students minimize unscheduled personal breaks.** The learning environment improves when disruptions are limited.
- **Students are fully prepared for each class.** Much of the learning takes place during classroom discussions. When students are not prepared they cannot contribute to the overall learning process. This affects not only the individual, but their peers who count on them, as well.
- **Students respect the views and opinions of their colleagues.** Disagreement and debate are encouraged. Intolerance for the views of others is unacceptable.
- **Laptops are closed and put away.** When students are surfing the web, responding to e-mail, instant messaging each other, and otherwise not devoting their full attention to the topic at hand they are doing themselves and their peers a major disservice.
- **Phones and wireless devices are turned off.** We've all heard the annoying ringing in the middle of a meeting. Not only is it not professional, it cuts off the flow of discussion when the search for the offender begins. When a true need to communicate with someone outside of class exists (e.g., for some medical need) please inform the professor prior to class.

Make-up and Drop Policy. This course does not permit make-ups except for documented medical emergencies. If the University policies allow, a student may withdraw/drop the course within the timeframes set by the University. Students who drop the course after the official withdraw/drop timeframe will receive a grade based on what they have earned in the course at that point in time.

Scholastic Dishonesty Policy. *The McCombs School of Business has no tolerance for acts of scholastic dishonesty. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the BBA Program's Statement on Scholastic Dishonesty at <http://www.mcombs.utexas.edu/BBA/Code-of-Ethics.aspx>. By teaching this course, I have agreed to observe all faculty responsibilities described in that document. By enrolling in this class, you have agreed to observe all student responsibilities described in that document. If the application of the Statement on Scholastic Dishonesty to this class or its assignments is unclear in any way, it is your responsibility to ask me for clarification. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since dishonesty harms the individual, all students, the integrity of the University, and the value of our academic brand, policies on scholastic dishonesty will be strictly enforced. You should refer to the Student Judicial Services website at <http://deanofstudents.utexas.edu/sjs/> to access the official University policies and*

procedures on scholastic dishonesty as well as further elaboration on what constitutes scholastic dishonesty.

The following was taken from the website for the Dean of Students:

A fundamental principle for any educational institution, academic integrity is highly valued and seriously regarded at The University of Texas at Austin. More specifically, you and other students are expected to maintain absolute integrity and a high standard of individual honor in scholastic work undertaken at the University. This is a very basic expectation that is further reinforced by the University's [Honor Code](#). At a minimum, you should complete any assignments, exams, and other scholastic endeavors with the utmost honesty, which requires you to:

- acknowledge the contributions of other sources to your scholastic efforts;
- complete your assignments independently unless expressly authorized to seek or obtain assistance in preparing them;
- follow instructions for assignments and exams, and observe the standards of your academic discipline; and
- avoid engaging in any form of academic dishonesty on behalf of yourself or another student.

For the official policies on academic integrity and scholastic dishonesty, please refer to [Chapter 11](#) of the *Institutional Rules on Student Services and Activities*.

Questions and comments about scholastic dishonesty and related procedural issues in undergraduate courses can be directed to David Platt, Associate Dean for Undergraduate Programs, in the Undergraduate Programs Office (471-3518).

Students with disabilities. Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259, <http://www.utexas.edu/diversity/ddce/ssd/>.

Religious holy days. By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

Campus safety. Please note the following recommendations regarding emergency evacuation from the Office of Campus Safety and Security, 512-471-5767, <http://www.utexas.edu/safety/>:

.. Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.

.. Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.

.. Students requiring assistance in evacuation should inform their instructor in writing during the first week of class.

.. In the event of an evacuation, follow the instruction of faculty or class instructors.

.. Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.

.. Behavior Concerns Advice Line (BCAL): 512-232-5050

.. Further information regarding emergency evacuation routes and emergency procedures can be found at: www.utexas.edu/emergency.

COURSE OUTLINE

S#	Day	TOPIC	Reading / case assignments / Dues
1	M 8/28	<ul style="list-style-type: none"> Introduction to course & projects 	<ul style="list-style-type: none"> (BB) COURSE SYLLABUS (BB) PROJECT DESCRIPTIONS (BB) PROJECT GUIDELINES (BB) GTAG-1: Information Technology Risk and Controls, pp. 2-25. Completed student information survey on Blackboard by midnight on 9/30.
-	M 9/2	<ul style="list-style-type: none"> No class: Enjoy the Labor Day Holiday 	
2	W 9/4	<ul style="list-style-type: none"> IT Infrastructure Security and Controls By William Turner, PhD; Senior Director, Data Center Architecture, Presidio 	<ul style="list-style-type: none"> (BB) GTAG-15: Information Security Governance Additional readings TBA by guest speaker, if any Project Teams & Topics Due by 11am, 9/4
3	M 9/9	<ul style="list-style-type: none"> IT Application Security and Controls By William Turner, PhD; Senior Director, Data Center Architecture, Presidio 	<ul style="list-style-type: none"> (BB) GTAG-15: Information Security Governance Additional readings TBA by guest speaker, if any
4	W 9/11	<ul style="list-style-type: none"> IT Operations Governance and Controls By William Turner, PhD; Senior Director, Data Center Architecture, Presidio 	<ul style="list-style-type: none"> (BB) GTAG-15: Information Security Governance Additional readings TBA by guest speaker, if any
5	M 9/16	<ul style="list-style-type: none"> COSO: A Framework For Enterprise Risk Management 	<ul style="list-style-type: none"> COSO Executive Summary 2013 Case-1: Tanriverdi, H., Lau, S., Hubbard, H., Sukholutsky, D., and Liu, C. "Data Theft at the McCombs School of Business," The University of Texas at Austin, Austin, TX, 2007, pp. 2-10.

S#	Day	TOPIC	Reading / case assignments / Dues
6	W 9/18	<ul style="list-style-type: none"> Case-1: Data Theft at the McCombs School of Business (2006) By David Burns, Director, Computer Support Services, McCombs Business School 	<ul style="list-style-type: none"> Case-1: Tanriverdi, H., Lau, S., Hubbard, H., Sukholutsky, D., and Liu, C. "Data Theft at the McCombs School of Business," The University of Texas at Austin, Austin, TX, 2007, pp. 2-10. Project proposals due by 11am, 9/18
7	M 9/23	<ul style="list-style-type: none"> COBIT: A Framework For Information Technology Risk Management 	<ul style="list-style-type: none"> COBIT 5 Executive Summary COBIT 4.1 pages 9-28. Caselet: Union National Bank
8	W 9/25	<ul style="list-style-type: none"> IT General Control (ITGC) Audits 	<ul style="list-style-type: none"> GAIT for IT General Control Deficiency Assessment - An approach for evaluating ITGC deficiencies in Sarbanes-Oxley Section 404 assessments of internal controls over financial reporting. Sponsor's written feedback on project proposals returned to students
9	M 9/30	<ul style="list-style-type: none"> IT Application Controls Audits 	<ul style="list-style-type: none"> GTAG-8: Auditing Application Controls
10	W 10/2	<ul style="list-style-type: none"> Case-2: AlphaCo: A Teaching Case on Information Technology Audit and Security 	<ul style="list-style-type: none"> Case-2: Tanriverdi, H., Harrison, J., Mesuria, K.S., Bertsch, J., Hsiao, P., and Hendrawirawan, D. "AlphaCo: A Teaching Case on Information Technology Audit and Security," The Journal of Digital Forensics, Security and Law (1:1) 2006, pp 35-61.
11	M 10/7	<ul style="list-style-type: none"> Identity Governance & Access Controls By Collin Perry, SailPoint 	<ul style="list-style-type: none"> GTAC-9: Identity and Access Management
12	W 10/9	<ul style="list-style-type: none"> Hacking techniques; attack and penetration testing By Advanced Security Center of E&Y 	<ul style="list-style-type: none"> Readings TBA by guest speaker, if any

S#	Day	TOPIC	Reading / case assignments / Dues
13	M 10/14	<ul style="list-style-type: none"> Computer Aided Audit Tools & Techniques (CAATTS) and the Use of Data Analysis Meet at MOD Lab at 11am for a tutorial on ACL by course TA 	<ul style="list-style-type: none"> ACL Tutorial Notes by course TA CAATTS Assignment
14	W 10/16	<ul style="list-style-type: none"> Computer Forensics-I: Overview By William Turner, PhD; Senior Director, Data Center Architecture, Presidio 	<ul style="list-style-type: none"> Readings TBA by guest speaker, if any Status reports due by 11am, 10/16
15	M 10/21	<ul style="list-style-type: none"> Computer Forensics-II: Demo By William Turner, PhD; Senior Director, Data Center Architecture, Presidio 	<ul style="list-style-type: none"> Readings TBA by guest speaker, if any
16	W 10/23	<ul style="list-style-type: none"> Computer Forensics-III: Analysis & Discussion By William Turner, PhD; Senior Director, Data Center Architecture, Presidio 	<ul style="list-style-type: none"> Readings TBA by guest speaker, if any Sponsor's written feedback on status report is returned to students
17	M 10/28	<ul style="list-style-type: none"> Case-3: Security breach at TJX 	<ul style="list-style-type: none"> (HP) Case-3: Nicole R.D. Haggerty, Ramasastry Chandrasekhar. (2008). "SECURITY BREACH AT TJX." Richard Ivey School of Business. Version: (A) 2008-03-12
18	W 10/30	<ul style="list-style-type: none"> Auditing Privacy Controls By Michael Porier, Protiviti 	<ul style="list-style-type: none"> IPPF – Practice Guide - Auditing Privacy Risks
19	M 11/4	<ul style="list-style-type: none"> Payments Fraud, By Suba Vasudevan, Facebook 	<ul style="list-style-type: none"> GTAG-13: Fraud Prevention and Detection in an Automated World CAATTS assignment due by 11am, 11/4
20	W 11/6	<ul style="list-style-type: none"> Data visualization and in-memory databases By David Hendrawirawan, Dell 	<ul style="list-style-type: none"> GTAG-16: Data Analysis Technologies

S#	Day	TOPIC	Reading / case assignments / Dues
21	M 11/11	<ul style="list-style-type: none"> SAS70/ SSAE16 Reports By John Moellenberg, Partner & Mark Knight, IT Audit Senior, Holtzman Partners 	<ul style="list-style-type: none"> GTAG-7: Information Technology Outsourcing
22	W 11/13	<ul style="list-style-type: none"> Mobile technologies and their implications for governance, risk, and controls By Brian Thomas and Reema Parappilly, Weaver 	<ul style="list-style-type: none"> Readings TBA by guest speaker, if any
23	M 11/18	<ul style="list-style-type: none"> Social Media and its implications for governance, risk, and controls By Tom Pruszkowski & David Janes, Ernst & Young LLP 	<ul style="list-style-type: none"> Readings TBA by guest speaker, if any
24	W 11/20	<ul style="list-style-type: none"> IT security loss exposure, data privacy liability, and insurance coverage By Paul Gouge, CNA 	<ul style="list-style-type: none"> Readings TBA by guest speaker, if any
25	M 11/25	<ul style="list-style-type: none"> Introduction to Professional Associations of Internal Auditors and IT Auditors By ISACA and IIA representatives 	<ul style="list-style-type: none"> Final project reports are due by 11am, 11/25
26	W 11/27	<ul style="list-style-type: none"> Take home final assigned and discussed in class Course wrap-up, course & instructor evaluations 	<ul style="list-style-type: none"> Final presentation slides due by 6pm on Sunday December 1st
27	M 12/2	<ul style="list-style-type: none"> Presentations of Teams 1,2,3,4 to ISACA 	<ul style="list-style-type: none"> Read team presentation slides
28	W 12/4	<ul style="list-style-type: none"> Presentations of Teams 5,6,7,8 to ISACA 	<ul style="list-style-type: none"> Read team presentation slides
	Sat 12/6	<ul style="list-style-type: none"> Take final solutions due by 12:30pm on 12/6 	