

NEW YORK UNIVERSITY – Stern School of Business
DEPARTMENT OF ACCOUNTING
INTERNAL CONTROLS AND ACCOUNTING INFORMATION SYSTEMS
ACCT-GB.6415
Summer 2020

Instructor: Prof. Joel Lanz, MBA, CPA/CGMA/CFF/CITP, CFE, CISSP, CISA, CISM

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Office: Remote

Office Hours: By appointment/telephone. (Available Tu, Th, Fr, Sa & Su).

Phone: 516-933-3662 (If I do not pick up, please leave a message with alternate times to return your call – weekend and evening telephone appointments are possible).

Class Sections of Internal Controls and Accounting Information Systems:

DATES	ACCT-GB.6415 Section # (CRN)	DAY	TIME	LOCATION
7/6-8/12	C1 (4434)	MW	9:00-11:55	Zoom
7/6-8/12	C2 (4443)	MW	1:00-3:55	Zoom

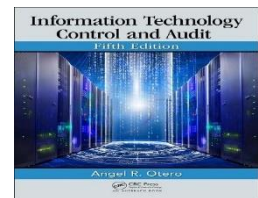
Bulletin Description:

Information technologies impact every aspect of accounting, including financial reporting, managerial accounting, auditing, and tax. The nature of the work done by CPAs and financial managers continues to evolve as these technologies advance. In some organizations, the technology function now reports to the Chief Financial Officer ("CFO") or their designee. The storage of business assets and financial information has led to recent professional pronouncements requiring that accounting professionals understand the technical controls used to process and record this information. As data increasingly becomes digitalized, significant opportunities exist for accounting professionals and their firms to leverage technology tools to become more efficient in performing traditional services and open opportunities for new client services. This course will help students understand these opportunities and help them facilitate the management of these risks.

Course Materials:

The required text for the class is "Information Technology Control and Audit, 5th Edition, Angel R. Otero, 2019." CRC Press, ISBN-13: 978-1-4987-5228-2 (ISBN is for the hardback print copy).

You can choose any format of the text that best satisfies your study and budget needs.



Course Objectives/Goals (What I hope you will learn from the course):

Welcome to Internal Controls and Accounting Information Systems (GB 6415)!

GB 6415 will help prepare you for an increasingly complex world where technology continues to influence and disrupt existing business models and service delivery strategies. My goal is to prepare you for a successful transition to public practice, industry, or government by understanding how to audit, use, and participate in the design of accounting information systems.

During our time together, you will learn how to assess, design, and consider the impact of IT risks and corresponding controls on financial reporting and business operations. Our lectures, discussions, and assignments will focus on how managers address IT and business processes to help achieve organizational objectives and ensure accurate financial reporting. Through selected tasks that simulate real-world professional accounting challenges, you will gain confidence in your developing abilities to assess system controls and to effectively design risk mitigation strategies for systems for which you provide assurance or advisory services. Some of you will use this knowledge in a direct management capacity or contribute to various aspects of acquisition and merger due diligence assignments. As appropriate, we also examine selected IT-related regulatory and financial reporting developments.

I appreciate that for many of you, our profession's CPA licensing exam is on your mind. GB 6415 will help you gain confidence in answering the information technology and corporate governance topics of the BEC section and selected information technology-related topics in the AUD section.

You will be graduating into an increasingly competitive global marketplace clamoring for professionals who can provide better information assurance and the ability to facilitate business development opportunities and performance. IT professionals have the technical expertise necessary to ensure the secure configuration of IT hardware or the proper deployment of technology solutions. Yet their solutions lack the CPA's or financial manager's perspective and ability to understand the complicated business implications, governance challenges, and risks associated with technology.

This syllabus will help you understand course expectations and plan for the upcoming semester. Concerning office hours, as many of you are outside the New York area, and some have a twelve-hour time difference, I will be offering office hours on a flexible schedule daily. Except for Mondays and Wednesdays (when we have class), please feel free to pick up the phone and call me. Alternatively, we can schedule something on the phone or through zoom. Should you need any accommodations, please let me know as soon as you can.

SECTION: GRADE DETERMINATION AND COURSE REQUIREMENTS:

SEGMENT	TYPE	% OF GRADE
Team Breakout Room Discussions	Team	15%
Individual Value Add to Class	Individual	15%
Midterm Exam	Individual	30%
Final Exam	Individual	40%

The Undergraduate College Grading Guidelines serves as a basis for determining grades:

- A's – awarded for excellent work
- B's – awarded for good or very good work
- C's (or below) – awarded for adequate or below work.

Team Breakout Room Discussions (Team) – 15% of Grade

We will be using a small number of cases to illustrate and discuss the course contents. Please read the cases before we consider them during class. During selected classes, students will work in groups using Zoom's breakout room feature. Some of these discussions may require "outside the class preparations" and presentations to the class. However, to the extent possible, given the geographic challenges, I will try to provide the team with class time as appropriate and needed. These team efforts will reflect 15% of your Grade. As to team composition, students share diverse opinions. Some of these concerns arise from the risk of individual team members not fulfilling their team responsibilities resulting in overall weak team performance. I have adopted the following policy for the class to help manage these risks:

- I will randomly assign students to teams of five (depending on class registration, and we may have a group of six. Once assigned, changes to these assignments will generally not be permitted.
- I reserve the right to change team assignments as needed to reflect unusual circumstances requiring my involvement, including but not limited to, ensuring that all students are assigned to a team.
- I will assign one total score for the team reflective of their semester efforts. Each team member will provide me with confidential feedback (submitted through NYU classes) as to the contribution of each of their team members. Although I intend to assign the same score to the entire team, I reserve the right to adjust (either up or down) based on my observations and the confidential feedback provided regarding individual member contributions to the team.

Individual Value Add to Class – 15% of Grade

Your participation in class discussions – whether during Zoom meetings, the mandatory question forum, or through optional discussion forums is an expected and critical component of the course. Please contribute throughout the semester as a lack of contribution in one week cannot be made up for in another week.

During each class meeting, I invite you to participate in classroom discussions and in-class exercises. To do so usually requires that you appropriately prepare for class. Active involvement includes, (1) volunteering throughout the course, (2) ready to respond if called on, (3) asking pertinent questions of the speakers/classmates and the Professor, and (4) actively participating in case discussions. Please note that these activities are in addition to your contributions made as part of a team described above and do not include course administration questions. Zoom class participation is mandatory unless you contribute to the optional NYU class forums further described below.

Question Forum (mandatory)- at a minimum, each student must contribute an original (that they create) multiple-choice question for each Unit 1 lecture topic and two multiple-choice questions for each Unit 2 lecture topic (eight items in total for the semester). All submissions must contain an explanation for the correct answer and all incorrect answers. Each exam will include a minimum of between 5% and 10% of questions selected from this pool. You will receive a half-point bonus for your total grade score if an item you submitted is selected for the exam.

Optional Discussion Forums – An alternative way (or for some a supplemental way to contribute) is to participate in the optional discussion forums on NYU classes. Forums will include "AIS in the News," "Cybersecurity and the Financial Executive," and "Impact of COVID-19 on the accounting profession." You can achieve maximum scores in this category by balancing your contributions for the various formats.

Please record all your contributions in a log (I will provide a sample on our course website) and submit it at the end of the semester (see the due date below). You can achieve the average score for this category (approximately a "B") by fulfilling all minimum contributions evenly during the semester and submitting the required log. Additional efforts may result in a higher than average score.

Two Exams (Individual) – 70% of Grade

There will be two exams. The midterm will count for 30% of your Grade and the final 40%. The level of difficulty of exam questions will be like that of professional accounting-related certification exams (e.g., CPA, CMA, CISA, CIA) and will test your ability to apply, analyze and evaluate the course materials. The exams will consist of a combination of multiple choice and true/false questions. Your studies should plan for the use or demonstration of knowledge, concepts or techniques; the examination and review of the interrelationships of separate areas to identify causes and to find evidence to support inferences; and the examination or assessment of problems, and use of judgment to draw conclusions.

SECTION: COURSE CONTENTS, PREPARING FOR CLASS AND SCHEDULE (subject to change)

You will find that the "Accounting Information System" course differs from other accounting courses as it is not financial or numerical based. *Innovative, creative problem solving, and "outside the box" thinking will help you master course contents and grading components.* You may need to adopt a different study process than what might have worked well for you in other accounting courses. Consider leveraging study techniques used in Auditing, Management, MIS, and Economics courses in developing your study plan.

Our course takes a risk management approach to Accounting Information Systems (AIS) and includes the following units:

- Unit 1, IT Audit, and Applications (chapters 1, 3, 9, and 13), introduces you to IT Auditing, Application Systems, and General Controls. Building upon your Auditing class, we discuss the impact of IT on the financial audit and introduce technology risk advisory services performed by CPA and other-related advisory firms. Our application systems discussions will focus on the risks impacting information reliability, and the controls used to manage these risks. We will also introduce the role of general controls, such as the system development lifecycle (SDLC) and program change controls. The section includes a KPMG case study that simulates a simple IT Audit focusing on general controls.
- Unit 2, Technology Risk Management (chapters 5, 6, and 12) explores IT Governance, Enterprise Risk Management, and Information Security (including cybersecurity). Building upon your knowledge of COSO-ICFR, we will examine the components of COSO's 2017 Enterprise Risk Management framework. We will then focus on general/pervasive IT controls relating to operations, information security, and cyber risks (chapter 12). Using the Equifax breach, we will examine both ERM and cybersecurity best practice controls that management can implement to minimize similar incidents and prepare for resiliency.

As needed, you can access non-textbook readings and materials through NYU Classes.

Each unit and class includes activities that everyone needs to do at the same time (synchronous – Zoom Class) and activities that you can do at different times (asynchronous – outside of class). The following outline will help you prepare for each class and includes the following activities:

Before the Zoom Class students will:

- Read the text chapter (~40 minutes)
- Watch the Professor's mini-lectures (series of videos ranging from 5-15 minutes each (~60 minutes)
- Read the Zoom Class outline (~10 minutes)
- Read/review the assigned case (~20-60 minutes – note only two cases during the semester, but you may need to read for multiple classes)
- Post questions or other matters that they would like the Professor to address during the Zoom class.

During the Zoom Class, students will: (usually 120 minutes required and 50 minutes optional)

- Participate in an instructor-guided discussion on the topic (see Zoom class outline). (note – will refer to the applicable case throughout the class)
- Participate in polls
- Discuss an exercise/activity in breakout rooms and report back to the class (selected classes only)
- As desired, participate in the optional fifty-minute segment – questions, administrative issues, "hallway discussions," etc.

After the Zoom Class, students will:

- Review their notes and class preparation materials (~30 minutes)
- Contribute a multiple-choice question (with suggested answers and explanations) that could potentially appear on the exam (extra credit if the item appears on the exam). (~20 minutes)
- Participate (post or response to) one of the Discussion Forums (~15 minutes)
- As needed contact Professor for further clarifications or post question to the discussion forum

Course Lecture and Exam Schedule (Subject to Change)

The color codes reflect the week of the semester. Our six-week course will have two meetings each week unless noted otherwise.

<u>DATE</u>	<u>LEC #</u>	<u>SECTION</u>	<u>TOPIC</u>	<u>Exam due by 6 PM (NY Time)</u>
July 6	1	Orientation	Welcome and Overview	
July 8	2	1	IT Environment & Audit (Ch 1)	
July 13	3	1	The IT Audit Process (Ch 3)	
July 15	4	1	Systems Acquisitions (Ch 13)	
July 20	5	1	Application Systems (Ch 9)	
July 22	6	2	Governance & Strategy (Ch 5)	
July 27	7	2	Governance & Strategy (cont.)/ ERM (Ch 6)	Unit 1 (Lec 1-5)
July 29	8	2	ERM (cont.)	
Aug 3	9	2	General Controls (Ch 12)	
Aug 5	10	2	General Controls/Information Security (Ch. 12)	
Aug 10	11	2	General Controls/Information Security (cont.)	
August 12	12	2	Final Exam is the Unit 2 Exam	Unit 2 (Lec 6-11)

Note: Individual contribution logs must be submitted online by Friday, August 7, 11:00 PM New York Time

SECTION: GENERAL COURSE NOTICES AND POLICIES

Re-Grading:

In line with Grading Guidelines for NYU Stern, the process of assigning grades is intended to be one of unbiased evaluation. Students are encouraged to respect the integrity and authority of the Professor's grading system and discouraged from pursuing arbitrary challenges to it.

If a student feels that an inadvertent error has been made in the grading of an individual assignment or in assessing the overall course grade, a request to have the Grade re-evaluated may be submitted. Students should submit such requests in writing to the Professor within seven days of receiving the Grade, including a brief written statement supporting the concern.

Class Conduct and Participation

To maximize various course grades, please attend class (via Zoom) and be thoroughly prepared to discuss the assigned readings and assignments. To facilitate class and group discussions, please ensure that your video is on. Please mute your audio until you intend to speak. Professional standards continually evolve and change. As part of their professional development, students will need to learn how to monitor these issues and maintain their competencies.

Students must engage in appropriate professional behavior that includes prompt arrival to class (via Zoom). Other expectations include courteous participation in class (i.e., being attentive while others are speaking, dedicating your attention to this class while the lecture is in session and leaving class at the designated time), and professional preparation for class. To prepare for class professionally, you should read the assignments before class, solve assigned problems, engage in-class discussions (or optional forums), and actively participate in group activities.

Contributions and class participation during our use of cases and assignments constitute an integral part of our shared experience. Your active participation helps me to evaluate your overall performance as a student (as well as making the class more interactive and engaging for all of us as we address issues that many Accounting professionals consider complex and challenging). I value the quality of your participation more than the quantity. Some find it uncomfortable to present viewpoints in a large group setting or even to partner on a team- yet, contributing to discussions and being an active team member is an essential part of your professional development and future success as a CPA. Please do not hesitate to contact me if you are looking for "equivalent" ways to contribute in a manner that makes you feel comfortable.

Academic Integrity:

Integrity is critical to the learning process and to all that we do here at NYU Stern. As members of our community, all students agree to abide by the NYU Stern Student Code of Conduct, which includes a commitment to:

- Exercise integrity in all aspects of one's academic work, including, but not limited to, the preparation and completion of exams, papers, and all other course requirements by not engaging in any method or means that provides an unfair advantage.
- Acknowledge the work and efforts of others when submitting written work as one's own. Ideas, data, direct quotations, paraphrasing, creative expression, or any other incorporation of the work of others should be fully referenced.
- Refrain from behaving in ways that knowingly support, assist, or in any way attempt to enable another person to engage in any violation of the Code of Conduct. Our support also includes reporting any observed violations of this Code of Conduct or other School and University policies that are deemed to affect the NYU Stern community adversely.

NYU STERN Policies:

Unless identified in the syllabus, default Stern policies apply to this course. The School expects that students will conduct themselves with respect and professionalism toward faculty, students, and others present in class and will follow the rules laid down by the instructor for classroom behavior. Students who fail to do so may be asked to leave the Zoom meeting.

Course evaluations are beneficial to students who come after you and to us. Please complete them thoughtfully. Your class will be recorded for educational purposes. The entire Stern Student Code of Conduct applies to all students enrolled in Stern courses and is available at:

- Undergraduate College: <http://www.stern.nyu.edu/uc/codeofconduct>
- Graduate Programs: http://w4.stern.nyu.edu/studentactivities/involved.cfm?doc_id=102505

Student Contact Information:

Student contact information must be kept current to receive important notices from the School and me. Your contact information is **online via your NYU Learns course email**. All-important class notices, including Zoom invites, class communications, will be sent only to your NYU Classes email address.

Students with Disabilities

If you have a qualified disability and will require academic accommodation of any kind during this course, you must notify me at the beginning of the course and provide a letter from the Moses Center for Students with Disabilities (CSD, 998-4980, www.nyu.edu/csd) verifying your registration and outlining the accommodations they recommend. If you need to take an exam with the assistance of the CSD, you must submit a completed Exam Accommodations Form to them at least one week before the scheduled exam time to be guaranteed accommodation.

SECTION: COURSE DESIGN CONSIDERATIONS

References and additional reading

CIS Controls. Report no: v 7, Center for Internet Security.

Framework for Improving Critical Infrastructure Cybersecurity. Publication no. v 1.1, National Institute of Standards and Technology, April 16, 2018.

"CPA Exam Blueprints," available at <https://www.aicpa.org/becomeaicpa/cpaexam/examinationcontent.html>

Various AICPA Service Organization Control suite of services publications available at

<https://www.aicpa.org/interestareas/frc/assuranceadvisoryservices/sorhome.html>.

Various COSO guidance publications are available at <https://www.coso.org/Pages/guidance.aspx>.

Various ISACA CoBIT-related publications available at <http://www.isaca.org/cobit/pages/default.aspx>

Influence of recent Professional organization activities on course design:

On their website, the International Federation of Accountants summarized the challenges and opportunities facing the accounting profession:

- "After 600 years of a two-ledger bookkeeping practice and 30 years of Excel spreadsheets, businesses are moving quickly toward the use of automation to account for daily transactions. This seismic shift will impact not only the way business operates, but also the day-to-day role of accountants. Technological developments continue to significantly impact nearly every aspect of business across all organizations regardless of size or sector. Rapid transformation continues to challenge the status quo and change thinking. From social media to self-driving cars, the last decade alone has seen groundbreaking technological advancements in all industries. Accountancy—the language of business—is no exception. The importance of professional accountants monitoring and adapting to changes driven by technology is clear. Doing so will enable us to continue to support organizations and help us remain relevant as the marketplace and society undergo rapid change.
- The introduction of emerging technologies brings new opportunities for both how professional accountants operate and the nature of our roles. This includes the impact of automation on transactional tasks, cloud computing, and new emerging areas, such as cybersecurity and predictive analytics, together with a focus on providing valuable insights. Looking forward, blockchain, artificial intelligence and advancements in robotics are expected to transform further business models and change workforces' skills and

competencies.

The AICPA recently introduced a variety of new assurance services enabling professionals to provide assurance services for technology-related environments, including the SOC suite of services (SOC for Service Organizations and SOC for Cybersecurity). Students will be able to differentiate between these services and help management implement the results of these reports into an overall risk management program.

COSO issued the 2017 update to the *Enterprise Risk Management — Integrated Framework* to address the evolution of enterprise risk management and the need for organizations to improve their approach to managing risk to meet the demands of an evolving business environment. The updated document, *Enterprise Risk Management — Integrating with Strategy and Performance*, highlights the importance of considering risk in both the strategy-setting process and in driving performance.

ISACA (formerly known as Information Systems Audit and Control Association) engages in the development, adoption, and use of globally accepted, industry-leading knowledge and practices for information systems including the development and administration of the Certified Information Systems Auditor (CISA) and Certified Information Systems Manager (CISM) programs. ISACA is also responsible for the development and maintenance of CoBIT, a leading framework for the governance and management of enterprise IT.

The course is composed of the following topics and their approximate percentage of course time:

- Conceptual foundations of Accounting Information Systems including IT Audit (20%)
- Evaluating technology-based internal controls from an enterprise risk perspective using COSO-ICFR, COSO-ERM, CoBIT, and other AIS-related recognized frameworks (25%)
- Consideration of pervasive and general IT controls including AICPA-related technology products including but not limited to the Services Organization Controls (SOC) suite of services (25%)
- System Development Process and IT Vendor Management Oversight including System Implementation, Change Control, and Operations (15%)
- Application Controls including the use of control matrices to assess controls (15%)