`NEW YORK UNIVERSITY – STERN SCHOOL OF BUSINESS

DEPARTMENT OF ACCOUNTING

INTERNAL CONTROLS & ACCOUNTING INFORMATION SYSTEMS

ACCT-6415 SUMMER 2022

Instructor: Prof. Joel Lanz, MBA, CPA/CGMA/CITP, CFE, CISSP, CISA, CISM
Email: jl31@stern.nyu.edu
Office Hours: By appointment (typically before and after class).
Phone: 516-933-3662 (If I do not pick up, please leave a message with alternate times to return your call).

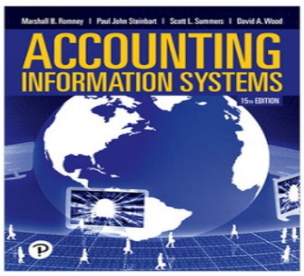
Class Sections of Internal Controls and Accounting Information Systems:

DATES	ACCT-GB.6415	DAY	TIME	LOCATION
7/5-8/11	C1	Tu & Th	9:30-12:25	Tisch UC21

Course Description:

Information technologies impact every aspect of accounting, including financial reporting, managerial accounting, auditing, and taxation. The storage of business assets and financial information has led to recent professional pronouncements requiring that accounting professionals understand the technology controls used to process and record this information. As information increasingly becomes digitalized, significant opportunities exist for accounting professionals and their firms to lever-age technology tools to become more efficient in performing traditional services and open opportunities for new client services. The purpose of this course is to help students under-stand how to use and participate in the design of accounting information systems and how to audit these systems. The course also helps students learn how to assess and consider the impact of IT governance, risk, and compliance on accounting functions, focusing on how IT affects business process and controls as well as the impact on financial reporting. The course also enables students to under-stand issues and developments in IT Auditing so that as practitioners, they can properly determine how to assess accounting system controls to effectively address the adequacy of controls in audited systems or for those systems for which they have management responsibility.

Course Materials:



The class's required text is "Accounting Information Systems, 15th Edition, Romney, Steinbart, Summers, and Wood,

There are multiple ISBN's for the following: ISBN-13: 9780135572832 (PEARSON). Students can purchase any format that best suits their needs and budgets (electronic, paper, or hardcover). The text is required for the class. We will be reviewing end of chapter questions and problems during class.

The Professor will supply additional materials on the course website.

Assessment and Grade Determination:

SEGMENT	% OF GRADE	DESCRIPTION
Exam #1 - AIS Foundations	40%	Exams consist of short answers (e.g., multiple-choice, true/false, etc.) questions. Half the exam will test Remembering and Understanding (the perception and comprehension the significance of an area utilizing knowledge gained). These questions will focus on textbook content and are considered of easy to moderate difficulty. The other half the exam focuses on your ability to apply your knowledge (the use or demonstration of knowledge, concepts or techniques). To answer these questions, you will use knowledge gained during the lectures when we review more challenging topics in the chapter, and we discuss the end of chapter exercises. These questions are considered of moderate to challenging difficulty.
Exam #2 - Cybersecurity, Information Security & Trust Service Criteria	40%	
Value Add Provided to Class	20%	I invite you to take part in classroom discussions and in-class exercises during each class meeting. To do so usually requires that you appropriately prepare for class. Preparation involves completing "before class" activities identified for the particular class session. This preparation usually involves reading the assigned texts, viewing professor videos, and other tasks depending on the assignment. Alternative ways of adding "value to the class" involve taking part in the "what have you learned online forums (one paragraph summary of something you learned in class). Should you feel uncomfortable with making public contributions, please let me know and we will come up with an equivalent alternative. Please contribute throughout the semester as a lack of contribution in one unit cannot be made up for in another unit. Review for value add requires submitting a log of all your contributions at the end of the semester. I will review further requirements and supply a log template during class.

The following grading guidelines serve as a basis for determining grades: A's – awarded for excellent work; B's – awarded for good or very good work; C's – awarded for adequate work; and F's - awarded for unsatisfactory or inadequate work.

Tentative Course Lecture and Exam Schedule (Subject to Change)

We will discuss preparation and study strategies during our first class. Please refer to the "**EXERCISES AND PROBLEMS FOR CLASS DISCUSSION"** that will be distributed during the first week of class on Brightspace for preparation, readings, homework, and other course expectations. Please note the two colors used to identify contents for each exam.

DATES	TOPICS
7/5 (Tu)	Unit A - Course Orientation and Introduction. Unit B - AIS Foundations (BEGIN) Text Chapter 1 Explain how an AIS adds value to an organization, how it affects and is affected by corporate strategy and its role in a value chain. We will look at the need for AIS through the perspective of a retailer (which will serve as a baseline example throughout the semester).
7/7 (Th)	Unit B – AIS Foundations (END) Unit C - Business Technologies and the Accountant (START) Text Chapter 2 Review of ERP and introduction to how emerging technologies impact the accounting profession. Discuss the new finance and the skills required to succeed. We will also consider how emerging technologies impact traditional accounting and audit functions. We will lay the technology foundation for the semester.
7/12 (Tu)	Unit C - Business Technologies and the Accountant (END) Unit D – Fraud and Errors (START)

	Text Chapter 8 Our society has become increasingly dependent on accounting information systems. As system complexity and our dependence on systems increase, companies face the growing risk of their systems being compromised. A recent survey disclosed that 67% of companies had a security breach, more than 45% were targeted by organized crime and 60% reported financial losses. This unit will provide a general introduction to fraud focusing on technology's ability to facilitate fraud.
7/14 (Th)	Unit D – Fraud and Errors (END) Unit E - Control and AIS (START) Text Chapter 10 This unit briefly reviews key concepts (internal audit) that you probably had in auditing and your undergrad courses. You will gain an appreciation for the critical frameworks such as COSO-ERM and CoBIT (as COSO-ICFR is covered in auditing) and how they are used by the profession.
7/19 (Tu)	Unit E - Control and AIS (END)
7/21 (Th)	MIDTERM EXAM (EXAM #1)
7/26 (Tu)	A limited review of Exam 1 (most challenging questions) Unit F – Computer Fraud and Abuse Techniques (START) Text Chapter 9 In this chapter we review some of the more common computer fraud and abuse attacks that companies need to defend themselves against. The idea is to appreciate the various attacks so that CPAs can advise on defensive strategies.
7/28 (Th)	Unit F – Computer Fraud and Abuse Techniques (END) Unit G - Information and Cybersecurity (START) Text Chapter 11 Organizations are under increasing pressure to demonstrate that they are managing cybersecurity threats and have effective processes and controls in place to detect, respond to, mitigate, and recover from breaches and other security events. To meet that need, the AICPA has introduced various cybersecurity risk assurance and advisory services that build upon the profession's experience in auditing systems and organization controls. This unit will discuss the more common cybersecurity threats and the cybersecurity risk management programs needed to prevent, detect and respond to security breaches.
8/2 (Tu) 8/4 (Th)	Unit G - Information and Cybersecurity (CONTINUED) Unit H - SOC Reports and other Trust Services Criteria (START) Text Chapters 12 Clients may engage a CPA to examine and report on controls at a service organization related to various types of subject matter, for example, controls that affect user entities' financial reporting or controls that affect the security, availability, and processing integrity of the systems or the confidentiality or privacy of the information processed for user entities' customers. This unit builds on the information security background obtained in the previous unit. It discusses the three different SOC for Service Organizations engagements (SOC 1®, SOC 2®, and SOC 3®) that involve reporting on controls at a service organization. We will also briefly discuss the new AICPA reporting for Cybersecurity Risk.
8/9 (Tu)	Unit H - SOC Reports and other Trust Services Criteria (END)
8/11 (Th)	FINAL EXAM (EXAM 2)

You will find that the "Accounting Information System" course differs from other accounting courses as it is not financial or numerical based. *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. Innovative, creative problem solving, and "outside the box" thinking will help you master course contents and grading components*.

A helpful technique is to assume the owner or CFO's role of a business familiar to you. As you prepare and study the course materials, ask yourself how an owner or CFO would use the information presented and apply it to their business.

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

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 directly 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.

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.

Observations on The CPA Exam

GB 6415 will help you gain confidence in answering the BEC section's information technology and corporate governance topics and selected information technology-related topics in the AUD section.

Some of you may already be following the new CPA exam (CPA Evolution initiative) scheduled to begin in January 2024. The CPA Evolution initiative intends to ensure that newly licensed CPAs have the required knowledge and skills best suited to serve clients, businesses, and the public. As the profession and the world navigate a new routine, the education required of CPA candidates and the CPA Exam itself will adapt to address the emerging skills and competencies necessary in today's marketplace. The new core-plus discipline model will allow candidates to show enhanced competency in a chosen discipline within the profession. Information Systems and Controls is one of the three discipline areas you can demonstrate increased competency.

General Course Notices and Policies

COVID Matters:

Please refer to NYU's COVID website at https://www.nyu.edu/life/safety-health-wellness/coronavirus-information.html. You will find NYU's hub for the latest COVID-19-related guidance and information on that site.

As it relates to our class:

- In the event that a student needs to be out of class, relevant materials (including recorded video of the class) will be shared on NYU Brightspace. Please contact me if you will be out of class and need accommodations.
- In the event that the course needs to be offered entirely online for a particular class meeting, we will meet synchronously at the standard class time using Zoom. Additional instructions about particular details of

class meetings or work will be emailed to you and in the event of a shift to online instruction (through Brightspace).
- In the event that a student needs to be out of class, we are recording each class session and making them available in NYU Brightspace. All students should access them there.

Re-Grading:

Students are encouraged to respect the Professor's grading system's integrity and authority and discouraged from pursuing arbitrary challenges. If a student feels that an error has been made in grading an individual assignment or 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:

If someone's behavior is disturbing you, please let me know. We must respect everyone's learning environment.

Please attend class and be thoroughly prepared to discuss the assigned readings and assignments to maximize various course grades. Students must engage in appropriate professional behavior that includes prompt arrival to class. 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, leaving class at the designated time), and professional preparation for class. To prepare for class professionally, you should read the assignments before class, watch videos, 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 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. One way is to participate in the online forums

Miscellaneous Class Policies and Strategies

Make-up Exams & Assignments

The need for make-up exams will not be granted except in EXTREMELY AND UNUSUAL situations. Any exceptions are at the sole discretion of the instructor.

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 specifically 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 classroom. Students are encouraged to work together for homework assignments.
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 Brightspace course email**. Please check your local address, local phone number, and emergency contact information on the school's Web and revise as needed. All-important class notices, including class communications, will be sent only to your NYU Brightspace 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 at 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.

DON'T BE SHY – CONTACT ME IF HELP IS NEEDED. In-person appointments available before and after class, telephone or zoom on most weeknights and weekends (yes, weekends) Alternatively, call my number anytime, and if possible, I will respond. If leaving a message, provide three alternative times (and send an email – so that I can respond) so that we can agree on a time.

SECTION: COURSE DESIGN CONSIDERATIONS

References and additional reading

CIS Controls. Report no: v 8 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/becomeacpa/cpaexam/examinationcontent.html

"Model Information Technology Curriculum," AICPA, 2020
Various AICPA Service Organization Control suite of services publications available at (https://www.aicpa.org/interestareas/frc/assuranceadvisoryservices/sorhome.html.
Various CPA Journal articles authored by the Professor.
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
Various IMA publications on Technology and Analytics available at www.imanet.org.

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Influence of recent Professional organization activities on course design:

Per the AICPA's Model Information Technology Curriculum:

> Information technology affects accounting professionals in every sector and service line. As we move into the future, technology will help them automate today's manual auditing and accounting processes so they can spend more time on analyzing the data, protecting sensitive client data or their organization's network, while understanding and anticipating the potential risks involved with the new or improved processes. At the core of accounting is information and data. Whether we focus on how to analyze, secure or audit that information, accounting professionals must understand how to utilize technology and evaluate associated risk. With the rise in the utilization of computer assisted auditing techniques (CAATs), tax operations, management reporting via visualization and dashboards, cloud technologies and automation, it is imperative that accountants be proficient in technology.
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> Technological innovation is not only allowing accounting professionals to deliver core audit and tax services more effectively and efficiently, but also creating new opportunities for them to deliver value to clients and employers. There is growing demand for accounting professionals with specialized skills and knowledge of technology and systems to help organizations achieve their business goals, manage the risk technology introduces as well as meet information governance, risk and compliance needs. As evidenced by the statistics that follow, advisory service opportunities in areas such as IT risk, business intelligence, data analysis and cybersecurity continue to grow.

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. COSO subsequently published other papers to aid the practitioner to implement recommendations provided.

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 (20%)
- 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 (20%)
- Cybersecurity Risk Management from an Accountant's perspective (20%)
- Data Analytics and Visualization for Accountants including application controls, computer assisted tools (20%)