Systems and Infrastructure Lifecycle Management

MIS 5203   Spring 2021

Instructor:	Brian Green
Office hours:	By appointment
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Zoom Dates:	Thursday 6:00 pm – 8:30 pm (January 21 – April 29)
Zoom Link:	https://zoom.us/j/91390365308
Link to Canvas:	https://templeu.instructure.com
Credit Hours:	3.00
Link to Class Website:	https://community.mis.temple.edu/mis5203sec701spring2021

Course Description

This course introduces students to the methods used as organizations builds an enterprise information system architecture within an environment of internal control. Topics include information system planning, management and usage, the development, acquisition and maintenance of these technologies and their impact on the organization's business processes.

Required Reading & Materials

Textbooks	Valacich J.S. and George J.F., 2019, <u>Modern Systems Analysis and Design</u>, Ninth Edition, Pearson Education, Inc., ISBN-13: 978-0-135172759
ISACA	CISA Review Manual 27th Edition, 2019, ISACA, ISBN 978-1-60420-767-5
	"COBIT 2019: Framework Introduction and Methodology", ISACA, ISBN 978-1-60420-763-7
	"COBIT 5: Enabling Processes", 2012, ISACA, ISBN 978-1-60420-241-0
	Chaudhuri, A., von Solms, SH, Chaudhuri, D. (2011), "Auditing Risks in Virtual IT Systems"
	Gelbstein, E. (2015) "Auditors and Large Software Projects, Part 1"
	Gelbstein, E. (2015) "Auditors and Large Software Projects, Part 2"
	Gelbstein, E. (2015) "Auditors and Large Software Projects, Part 3"
	Helskanen, A.LJK (2012) "Project Portfolio Management"

	Kancharia, M. and Bhattacharjee, S. (2010) "Realizing Benefits of IT Investments: Overcoming the Silver-bullet View"
	Raval, V. and Sharma, R. (2017) "Mitigating the Risk Factors of IT Project Failure"
	Singleton, T. (2014) "The Logical Reason for Consideration of IT"
	Singleton, T. (2014) "The Core of IT Auditing"
	Singleton, T. (2012) "Auditing Applications, Part 1"
	Singleton, T. (2012) "Auditing Applications, Part 2"
	Singleton, T. (2011) "Understanding the New SOC Reports"
	Singleton, T. (2010) "IT Audits of Cloud and SaaS"
FedRAMP	"CSP Authorization Playbook – Getting Started with FedRAMP"
FIPS	PUB 199 "Standards for Security Categorization of Federal information System and Information Systems"
NIST	Special Publication 800-34 Revision 1 "Contingency Planning Guide for Federal Information Systems"
	Special Publication 800-53A Revision 4 "Assessing Security and Privacy Controls in Federal Information Systems and Organizations"
	Special Publication 800-53 Revision 4 "Security and Privacy Controls for Federal information Systems and Organizations"
	Special Publication 800-64 Revision 2 "Security Considerations in the System Development Life Cycle" (SDLC)
SANS	Hein, R. (2004) "The Application Audit Process – A Guide for Information Security Professionals"
Misc.	INTOSAI (2008) "Why IT Projects fail, Best Practices Guide"
	Peppard, J. (2016) "A Tool to Map Your Next Digital Initiative", Harvard Business Review

Technology Requirements

The expectation for online courses is that students participate both by video and audio. All students are required to have a working camera and headset during class times. Class sessions are recorded, and the recordings are posted shortly after class, please be aware that anything said during class sessions will be included and posted.

- Headphones
- Webcam: You are required to keep your webcam on during the duration of the class session
- Recommended Internet Speed: 8mbps download & 5mbps upload.
  https://www.google.com/?q=internet%20speed%20test
- Please note: Hard-wired connections are more consistent than Wi-Fi for Zoom sessions

Course Objectives

Upon completion of this course, students will be able to (program competency in parentheses):

1. Evaluate the business case for the proposed investments in information systems acquisition, development, maintenance and subsequent retirement to determine whether it meets business objectives.

2. Evaluate IT supplier selection and contract management processes service levels and requisite controls are met.
3. Evaluate the project management framework and controls to determine whether business requirements are achieved in a cost-effective manner while managing risks to the organization.
4. Conduct reviews to determine whether a project is progressing in accordance with project plans, is adequately supported by documentation, and has timely and accurate status reporting.
5. Evaluate controls for information systems during the requirements, acquisition, development and testing standards, procedures and applicable external requirements.
6. Evaluate the readiness of information systems for implementation and migration into production to determine whether project deliverables, controls and the requirements are met.
7. Conduct post-implementation reviews of systems to determine whether project deliverables, controls and the requirements are met.

Method of Instruction

This is an online course, with twelve synchronous virtual classes held using Zoom, a video conferencing tool. Please plan your time accordingly. This class has been rigorously designed to effectively help students reach the course objectives through various deliverables. Attention to the course schedule and the suggested order of assignment completion is key to student success. It is incumbent upon students to work through all materials provided, attend optional office hours and ask questions as they come up to ensure successful completion of all deliverables in a timely fashion.

Canvas

Canvas is the university's current Learning Management System (LMS). For resources and/or Canvas related questions or issues please use the Help (?) feature in the Canvas Global Navigation for assistance via phone or a 24-hour Chat feature. Visit the "Tech Support" page in our Canvas Course for additional resources.

Zoom Virtual Classes

This course will meet twice a day using Zoom. Zoom is downloaded to your computer the first time you use it and does require regular updates; please download the latest version of Zoom **here** and open the downloaded file to install the app before the course begins. If you have already downloaded Zoom for a previous course, click **here** for instructions on updating to the latest version.

Make sure you enter your first name and last name correctly when signing into your Zoom session. **While there are ways to join a Zoom session through mobile phone, this should only be used in an emergency.** Please log into the virtual classes before the scheduled class time, as we will begin promptly. You can access the virtual classes in Canvas under the "Zoom" link in your Course Navigation. Students in classes with Zoom registration enabled can also access sessions via the link that is emailed to them.

Fox Online Graduate programs encourage students new to Zoom to join a student Zoom Walkthrough. Attendance to a pre-course Zoom Walkthrough is suggested for those new to the online course structure to test your audio and video prior to your first meeting. A list of Zoom Walkthroughs can be found here.

Video Recording & Sharing Policy

Any recordings permitted in this class can only be used for the student's personal educational use. Students are not permitted to copy, publish, or redistribute audio or video recordings of any portion of the class session to individuals who are not students in the course or academic program without the express permission of the faculty member and of any students who are recorded. Distribution without permission may be a violation of educational privacy law, known as FERPA as well as certain copyright laws. Any recordings made by the instructor or university of this course

are the property of Temple University. Any unauthorized redistribution of video content is subject to review by the Dean's office, and the University Disciplinary Committee. Penalties can include receiving an F in the course and possible expulsion from the university. This includes but is not limited to: assignment video submissions, faculty recorded lectures or reviews, class meetings (live or recorded), breakout session meetings, and more.

Code of Conduct Statement for Online Classes

Online Behavior

Students are expected to be respectful of one another and the instructor in online discussions. The goal is to foster a safe learning environment where students feel comfortable in discussing concepts and in applying them in class. Our differences, some of which are outlined in the University's nondiscrimination statement, will add richness to this learning experience. Therefore, all opinions and experiences, no matter how different or controversial they may be perceived, must be respected in the tolerant spirit of academic discourse. Treat your classmates and instructor with respect in all communication, class activities, and meetings. You are encouraged to comment, question, or critique an idea but you are not to attack an individual. Please consider that sarcasm, humor and slang can be misconstrued in online interactions and generate unintended disruptions. Profanity should be avoided as should the use of all capital letters when composing responses in discussion threads, which can be construed as "shouting" online. Remember to be careful with your own and others' privacy. In general, have your behavior mirror how you would like to be treated by others. If for any reason your behavior is viewed as disruptive to the class, you will be asked to leave and you will be marked absent from that class. Please read the university policy concerning disruptive behavior:

The disruptive student is one who persistently makes inordinate demands for time and attention from faculty and staff, habitually interferes with the learning environment by disruptive verbal or behavioral expressions, verbally threatens or abuses college personnel, willfully damages college property, misuses drugs or alcohol on college premises, or physically threatens or assaults others. The result is the disruption of academic, administrative, social, or recreational activities on campus.

Online Classroom Etiquette

The expectation is that students attending online courses will behave in the same manner as if they were in a live classroom. Be courteous and professional in your location, attire and behavior. Specifically, your location should reflect a clean and professional appearance - not a bedroom, crowded conference room, loud restaurant/bar, etc. Your attire should mirror what you might wear to a live classroom. We expect that students will not disrupt class through visuals or verbal outbursts, such as but not limited to, conversations with other people in the room, engaging in inappropriate behavior while you are in class or distracting the class in any other way. In addition, students should refrain from doing something in their online class that they would not do in a live classroom. which includes eating large meals, drinking alcohol, vaping, getting up often and leaving the online class (not staying at their computer). You should arrive on time and leave when the class is over. If there is an emergency of some kind, notify your faculty member via email or the chat function in Zoom.

Grade Breakdown

Item	Weight
Assignments	60%
Participation	10%
Exams	30%
Total	100%

Grading Scale	
100 – 93	A
92 – 90	A-
89 – 87	B+
86 – 83	B
82 – 80	B-
79 – 77	C+

76 – 73	C
72 – 70	C-
69 – 67	D+
66 – 63	D
62 – 60	D-
59 – 0	F

Grading Criteria

The following criteria are used for evaluating assignments. You can roughly translate a letter grade as the midpoint in the scale (for example, an A- equates to a 91.5).

Criteria	Grade
The assignment consistently exceeds expectations. It demonstrates originality of thought and creativity throughout. Beyond completing all of the required elements, new concepts and ideas are detailed that transcend general discussions along similar topic areas. There are no mechanical, grammatical, or organization issues that detract from the ideas.	A- or A
The assignment consistently meets expectations. It contains all the information prescribed for the assignment and demonstrates a command of the subject matter. There is enough detail to cover the subject completely but not too much as to be distracting. There may be some procedural issues, such as grammar or organizational challenges, but these do not significantly detract from the intended assignment goals.	B-, B, B+
The assignment fails to consistently meet expectations. That is, the assignment is complete but contains problems that detract from the intended goals. These issues may be relating to content detail, be grammatical, or be a general lack of clarity. Other problems might include not fully following assignment directions.	C-, C, C+
The assignment constantly fails to meet expectations. It is incomplete or in some other way consistently fails to demonstrate a firm grasp of the assigned material.	Below C-

Course Activities & Schedule:

Unit		Weekly Readings	Project (60%)	Exam (30%)
1 Introduction 1/21	Intro	MSAD Ch. 1, Ch. 2 "Systems Development Environment" CISA Ch. 3 "Systems Development Methodologies" CISA Ch. 3 "SDLC Models" CISA Ch. 3 "SDLC Phases"		
2 Project Management 1/28	Planning	MSAD Ch.1 "Project Management" CISA Ch. 3 "Project Management and Governance"		
3 Business Case & Feasibility Analysis 2/4	Planning	MSAD Ch. 4 "Identifying and Selecting Projects" MSAD Ch. 5 "Initiating and Planning Information Systems Projects" CISA Ch. 3 "Business Case and Feasibility Analysis"	*IS Auditors Role in Business Case Development*	
4 Requirement Determination 2/11	Analysis	MSAD Ch. 6 "Determining Systems Requirements" CISA Ch. 3 "Requirements Definition" SSD "Security Requirements"	*IS Auditor's Role in the SDLC*	
5 Process Modeling 2/18	Analysis	MSAD Ch. 7 "Structured System Process Requirements" CISA Ch. 3 "Structured Techniques" SSD "Vulnerability Mapping"		
6 Data Modeling 2/28	Analysis	MSAD Ch. 8 "Structured System Data Requirements" CISA Ch. 3 "Entity Relationship Diagrams" SSD "SDLS and SSD"		
7 3/4				**Planning & Analysis**
8 Database 3/11	Design	MSAD Ch. 9 "Database Design" CISA Ch. 3 "Control Identification and Design" CISA Ch. 3 "Relational and Embedded Databases" SSD "Class Security Analysis"	*IS Auditor's Role in Systems Design*	
9 Software 3/18	Design	SSD "Procedural Security" SSD "Modular Programming" SSD "Sensitive Data Mapping" SSD "Reducing the System Attack Surface" CISA Ch. 3 "Software Development Methods" CISA Ch. 3 "System Development Tools and Productivity Aids" CISA Ch. 3 "Control Identification and Design"		
10 Human-Computer Interaction 3/25	Design	MSAD Ch. 10 "Designing Forms and Reports" MSAD Ch. 11 "Designing Interfaces and Dialogues"		
11 4/1				**Design**
12 Architecture 4/8	Implementation	MSAD Chapter 13 "System Implementation" CISA Chapter 3.5 "Business Application Development" CISA Chapter 3.6 CISA Chapter 3.9 ISACA "Auditing Risks in Virtual IT Systems" ISACA "IT Audits of Cloud and SaaS"		
13 Software Development & Testing 4/15	Implementation	MSAD Ch. 12 "Designing Distributed and Internet Systems" CISA Ch. 3 "Infrastructure Development and Acquisition Practices" CISA Ch. 3 "Hardware and Software Acquisition" SSD "Secure Architectures"	*IS Auditor's Role in Process Reengineering*	
14 Migration & Deployment 4/22	Implementation	MSAD Ch. 13 "Systems Implementation" CISA Ch. 3 "IS Auditors Role in Project Management" CISA Ch. 3 "Software Development Methodologies" CISA Ch. 3 "Software Testing" SSD "Secure Architectures"	*IS Auditor's Role in Reviewing Application Controls*	
15 4/29				**Implementation**

Participation
Your participation during the virtual class discussion is based on you consistently demonstrating your thoughtful engagement with the material. Assessment is based on what you contribute. The frequency and quality of your contributions are equally important.

Exam
There will be three exams given during the semester. Together these exams are weighted 30% of each student's final grade (10% per exam).

Each exam will consist of multiple-choice questions. You will have a fixed time (e.g. 50 minutes) to complete the exam. The first exam, which is administered during unit 7, will cover the material from units 1 through 6. The second exam, delivered during unit 11, will cover units 8-10. The last exam, delivered after unit 14, covers units 12-14.

A missed exam can only be made up in the case of documented and verifiable extreme emergency situation. No make-up is possible for the last exam.

Quizzes
At the end of many class units I will provide you with a practice quiz consisting of multiple-choice questions modeled after the content of the CISA certification exam. Quizzes are for practice only. They will not count towards your final grade. The goals for the quizzes are twofold: 1) help you become familiar with technical information security areas requiring additional study and attention, and 2) help you gain skills that improve your test taking abilities.

Attendance
- Class discussion is intended to be an integral part of the course. Therefore, full attendance is expected by every student.
- If you are absent from class, speak with your classmates to catch up on what you have missed.
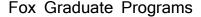
Class Etiquette:
- Please be respectful of the class environment.
- Class starts promptly at the start time. Arrive on time and stay until the end of class.
- Turn off and put away cell phones, pagers and alarms during class.
- Limit the use of electronic devices (e.g., laptop, tablet computer) to class-related usage such as looking up terms and taking notes. Restrict the use of an Internet connection (e.g., checking email, Internet browsing, sending instant messages) to before class, during class breaks, or after class.
- Refrain from personal discussions during class. Please leave the room if you need to speak to another student for more than a few words. If a student cannot refrain from engaging in private conversation and this becomes a pattern, the students will be asked to leave the classroom to allow the remainder of the students to work.
- During class time speak to the entire class (or breakout group) and let each person "take their turn."
- Be fully present and remain present for the entirety of each class meeting.

Student and Faculty Academic Rights & Responsibilities
Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has a policy on Student and Faculty Academic Rights and Responsibilities (Policy #03.70.02) which can be accessed at policies.temple.edu.
Academic Honesty
Learning is both an individual and a cooperative undertaking. Asking for and giving help freely in all appropriate settings helps you to learn. You should represent only your own work as your own. Personal integrity is the basis for intellectual and academic integrity. Academic integrity is the basis for academic freedom and the University's position of influence and trust in our society.

University and school rules and standards define and prohibit "academic misconduct" by all members of the academic community including students. You are asked and expected to be familiar with these standards and to abide by them. A link to Temple's Policy on Academic Dishonesty can be found at the following link: https://grad.temple.edu/resources/policies-procedures

Turnitin Canvas Plagiarism Framework

All major written assignments and presentations will be automatically submitted to Turnitin within Canvas for originality. Turnitin detects word patterns that are identical to those in other digitally available work, which includes, peer-reviewed papers, blogs, newspaper articles, and previously submitted student work. Any identical wording between your paper and that of any other work submitted digitally can be detected easily – if a quote is not appropriately marked and sourced, it constitutes as plagiarism.

Disability Statement

Any student who has a need for accommodations based on the impact of a documented disability or medical condition should contact Disability Resources and Services (DRS) in 100 Ritter Annex (drs@temple.edu; 215-204-1280) to request accommodations and learn more about the resources available to you. If you have a DRS accommodation letter to share with me, or you would like to discuss your accommodations, please contact me as soon as practical. I will work with you and with DRS to coordinate reasonable accommodations for all students with documented disabilities. All discussions related to your accommodations will be confidential.

Inclement Weather Policy

Please be advised that while Temple University campuses may close for inclement weather, online courses are not on-campus and therefore are still expected to meet. Your instructor will contact you regarding any adjustments needed in the event of a power outage or severe circumstances. Should you have any questions, please contact the professor.

Temple University's Technology Usage Policy

This site includes information on unauthorized access, disclosure of passwords, and sharing of accounts.
https://secretary.temple.edu/sites/secretary/files/policies/04.71.11.pdf

Citation Guidelines

If you use text, figures, and data in reports that were created by others you must identify the source and clearly differentiate your work from the material that you are referencing. If you fail to do so you are plagiarizing. There are many different acceptable formats that you can use to cite the work of others (see some of the resources below). The formats are not as important as the intent. You must clearly show the reader what is your work and what is a reference to someone else's work.