

**Auditing Controls in ERP Systems**  
aka  
**Business Processes, ERP Systems and Controls**

Fall 2016

**About the Instructor:**

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Office hours: Following each Class  
By appointment via phone / email

**Class Location and Time:**

Virtual / On-Line      5:30 – 8:15, Monday (starting August 29, 2016)

**Course Description:**

This course presents the fundamentals of ERP Systems, the business processes they enable and the controls necessary to assure they work properly. You will learn:

- The basic business processes that ERP systems support
- How these processes are implemented with ERP systems and
- How to secure and control the processes and systems for the integrity, confidentiality, authenticity and reliability of information.

By examining how an organization can secure and control its ERP systems with an effective control environment, we understand how to enable and maintain the integrity, confidentiality and reliability of information required for regulatory, operational and financial expectations.

**Course Objectives**

- Understand business processes and their role in the functioning of an organization.
- Explain what ERP systems are and practice (using SAP) their use to support business processes.
- Demonstrate the relationship between business process operational risks (including fraud) and the resulting integrity, confidentiality and reliability of information.
- Appraise and prioritize real world business process operational risks and recommend compensating controls to address the risks. Includes the fundamentals of ERP system controls, security, analysis of segregation of duties (SOD) risks and specifying how to manage them.
- Understand ERP System development and system operation risks and recommend compensating controls.

## Grading

Item	Weight
Participation (in class and online)	25%
Real World Control Failure Project	5%
Exercise Assignments (5)	35%
Exams (3)	35%
<b>Total</b>	<b>100%</b>

Grading Scale			
94-100	A	73-76	C
90-93	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	63-66	D
80-82	B-	60-62	D-
77-79	C+	Below 60	F

## Grading Criteria

The following are the general criteria 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 sufficient 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-

## Participation

Much of your learning will occur as you prepare for and participate in discussions about the course content. The assignments, cases, and readings have been carefully chosen to bring the real world into class discussion while also illustrating fundamental concepts.

To encourage participation, 25% of the course grade is earned by preparing before class and discussing the topics during and between classes. Evaluation is based on consistently demonstrating your engagement with the process of learning. Assessment is based on what you contribute, not simply what you know.

- 1) **Preparation between classes** - To facilitate learning the course material, we will discuss course material on the class blog in between classes. Each week, I will post discussions on the class blog for the following week's topic (see the **Weekly Cycle** section below). The questions will relate to the assigned readings, a topic to be discussed in class, or a relevant current event. Reading and commenting on these analyses will contribute to the quality of our in-class discussions.

Every student is expected to contribute to the online class discussion at least four times each week. Online contributions will be graded on both the quality of your submissions and the overall quantity. Four substantive posts a week will be considered a B.

- 2) **Participation during class** – During class there typically will be a discussion started with “opening” questions about the assigned readings and materials. I may ask for volunteers, or I may call on you. Students called on to answer should be able to summarize the key issues, opportunities, and challenges from the assigned readings and materials. All students should be prepared to answer these questions.

Another important aspect of in-class participation is completion of in-class assignments and contribution during break-out group activities. If you don't fully understand a topic being discussed, assignment, etc. – ask questions to facilitate your and the class's learning.

The criteria for class participation includes attendance, punctuality, level of preparation, professionalism, answering questions, discussing readings and other pre-class materials, contributing to group activities, and contributing to a positive learning environment.

## Real World Control Failure Project

Many classes will include a brief review of a real world scenario that represents internal control failures in an organization and the ramifications of that failure.

Starting in week 7, the students will assume responsibility for sharing these real world control failure stories.

Each student is responsible for finding a real world example and preparing a brief review. A PowerPoint (PPT) format will be provided to outline the content components / points required in the presentation. The student is responsible for presenting their review / story in a video format prior to a class (starting with class 7) based on an agreed sign-up schedule.

5% of the course grade is earned by this project. Evaluation is based on: 1) including the required content components, 2) Clear, concise presentation of the control failure 'story' and lessons learned, 3) originality in presentation of the control failure 'story'.

## Exercise Assignments

1. **Exercises 1-4:** We will use a teaching SAP client instance to complete the following case exercises. The exercises require successful completion of transactions and analysis on a defined teaching SAP client instance.

The first 2 exercises must be completed and submitted **individually**. The last 3 will be completed and submitted by **assigned small teams** (2-3 people / team).

The exercises must be completed by the defined deadline in the defined client instance.

Note: remote access is possible outside the classroom.

#	Exercise	Due Date	Due Time
1	SAP ERP GBI (Global Bike Inc.) – Procure to Pay	September 22	11:59 PM
2	SAP ERP GBI (Global Bike Inc.) – Order to Cash	October 13	11:59 PM
3	SAP ERP GBI (Global Bike Inc.) – Journal Entries	October 27	11:59 PM
4	SAP ERP GBI (Global Bike Inc.) – SOD (Segregation of Duties)	November 10	11:59 PM

2. **Final Exercise:** This assignment will be completed and submitted by the same assigned small teams (2-3 people / team) from the team exercise assignments. More details will be presented in class but will require the team to create and audit an internal controls framework for a chosen area. A template will be provided. There will be some time allotted during the class sessions to work on your assigned case study. It is expected that you will email me your presentation no later than Thursday December 15, 2016 at 5:00 PM. **Late submissions for this deadline will result in no credit earned for this assignment**

## Exams

There will be three (3) exams during the semester. Each exam will be conducted online (using Blackboard). Together these exams are weighted 35% of your final grade. Check the schedule for the dates.

All exams will consist of multiple-choice, fill in the blank and short answer questions. Some questions on each exam will relate to a short, fictitious but real-world like case. I will publish the case narrative separate from the exam. This allows you to read the case prior to taking the exam that has a fixed time to complete.

You'll have several days within which you can take each exam on-line. However, once you start you'll have a fixed time (e.g. 40 minutes) to complete the exam. Exam 1 will occur before week 6 class and Exam 2 will occur prior to week 11 Class. The final exam during Final Exam week.

In general, the exams will not be cumulative but focused on the course materials since the beginning of last exam. However, some concepts highlighted in class as a 'Core Principle' or 'This may be on the Final' may appear on any of the exams.

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

## Weekly Cycle

As outlined above in the **Participation** section, much of your learning will occur as you prepare for and participate in discussions about the course content. To facilitate learning the course material, we will discuss course material on the class blog in between classes. Each week this discussion will follow this cycle:

- You: Read, view, etc. content for week (see course blog's Schedule menu)
- Me: Post Questions (Tuesday am)
- You: Respond to questions and read & respond to other's answers (thru Sunday 11:59 pm).  
Note: Four substantive posts a week will be considered a B
- Us: Class (Monday)
- Me: Post summary note (if any) (Tuesday)

**Preparation between classes** - To facilitate learning the course material, we will discuss course material on the class blog in between classes. Each week, I will post discussions on the class blog for the following week's topic.

### Late Assignment Policy

An assignment is considered late if it is turned in after the assignment deadlines stated above. No late assignments will be accepted without penalty unless arrangements for validated unusual or unforeseen situations have been made.

- Class Blog contributions cannot be turned in late. If you miss contributing prior to class for that week's discussion / questions you will receive no credit for it.
- The exercise assignments will be assessed a **20% penalty** each day they are late. No credit is given for assignments turned in over five calendar days past the due date.
- You must submit all assignments, even if no credit is given. **If you skip an assignment, an additional 10 points will be subtracted from your final grade in the course.**
- Plan ahead and backup your work. ***Equipment failure is not an acceptable reason for turning in an assignment late.***

### Citation Guidelines

If you use text, figures, and data in reports that was 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 somebody else's work.

### Plagiarism, Academic Dishonesty and Citation Guidelines

All work done for this course: papers, examinations, homework exercises, blog posts, laboratory reports, oral presentations — is expected to be the individual effort of the student presenting the work.

Plagiarism and academic dishonesty can take many forms. The most obvious is copying from another student's exam, but the following are also forms of this:

- Copying material directly, word-for-word, from a source (including the Internet)
- Using material from a source without a proper citation
- Turning in an assignment from a previous semester as if it were your own
- Having someone else complete your homework or project and submitting it as if it were your own
- Using material from another student's assignment in your own assignment

Plagiarism and cheating are serious offenses, and behavior like this will not be tolerated in this class. In cases of cheating, both parties will be held equally responsible, i.e. both the student who shares the work and the student who copies the work. Penalties for such actions are given at my discretion, and can range from a failing grade for the individual assignment, to a failing grade for the entire course, to expulsion from the program.

### Student and Faculty Academic Rights and Responsibilities

The University has adopted a policy on Student and Faculty Academic Rights and Responsibilities (Policy # 03.70.02) which can be accessed through the following link:

[http://policies.temple.edu/getdoc.asp?policy\\_no=03.70.02](http://policies.temple.edu/getdoc.asp?policy_no=03.70.02)[http://policies.temple.edu/getdoc.asp?policy\\_no=03.70.02](http://policies.temple.edu/getdoc.asp?policy_no=03.70.02)

### Required Readings

Text Books	<b>Auditing and GRC Automation in SAP</b> by Chuprunov, Maxim. Published by Springer – Galileo Press, 2013 ISBN: 978-3642353017 Chapters: 1 – 12 <a href="http://www.amazon.com/Auditing-GRC-Automation-Maxim-Chuprunov/dp/3642353010">http://www.amazon.com/Auditing-GRC-Automation-Maxim-Chuprunov/dp/3642353010</a>
	<b>The Road to Character</b> by Brooks, David. Published by Random House New York, 2015 ISBN: 978-0812993257 Chapters 1, 3, 5, <a href="http://www.amazon.com/The-Road-Character-David-Brooks-ebook/dp/B00LYXV61Y">http://www.amazon.com/The-Road-Character-David-Brooks-ebook/dp/B00LYXV61Y</a>
Case Study	<b>SAP ERP GBI (Global Bike, Inc.)</b>

Additional references	
ISACA	<b>Concepts in Enterprise Resource Planning (Third Edition)</b> by Monk, Ellen, Wagner, Bret. Published by Course Technology Cengage Learning, 2009
	<b>Monitoring Internal Control Systems and IT: A Primer for Business Executives, Managers and Auditors on How to Embrace and Advance Best Practices</b> , ISACA, 2010 (complimentary download for ISACA members: <a href="https://www.isaca.org/bookstore/Pages/default.aspx">https://www.isaca.org/bookstore/Pages/default.aspx</a> ) Chapters 3 & 4
ASUG	<b>Sharp Electronics' Advice for SAP BusinessObjects GRC 10 Projects</b> , by Courtney Bjorlin, 2011, ASUG <a href="http://www.asugnews.com/2011/11/23/sharp-electronics%e2%80%99-advice-for-sap-businessobjects-grc-10-projects/">http://www.asugnews.com/2011/11/23/sharp-electronics%e2%80%99-advice-for-sap-businessobjects-grc-10-projects/</a>

## Schedule (Synchronous – Learnathon vs. Asynchronous Meet-Up)

Week	Topic	In-Class Activity	Assignment	Assignment Due
1 Aug 29	<b>Course Introduction</b> - Review Syllabus - Global Bike Inc. Case <b>ERP Systems Overview</b> <b>Why use Internal Controls?</b>	Key Business Processes		
<b>No Class – Labor Day</b>				
2 Sept 12	<b>Internal Controls &amp; Assertions</b> - What are Assertions - Relationship to Controls <b>Business Function vs. Process</b> <b>Introduction to P2P Process</b>	Procure to Pay (P2P) Process: What could go Wrong?	Procure to Pay: Steps 1 - 6	
3 Sept 19	<b>Fraud</b> - What is Fraud - Spotting Hi-Risk Fraud Scenarios <b>P2P Process Controls</b>	Personal Experience with Fraud	Procure to Pay: Steps 7 - 14	
4 Sept 26	<b>OTC Process</b> <b>OTC Risks and Controls</b> <b>Types of Controls</b> - Compare and Contrast	Order to Cash Process: What could go Wrong?	Order to Cash: Steps 1 - 8	Procure to Pay Exercise (Sept 22)
5 Oct 3	<b>Inventory Controls</b> <b>OTC: Shipping Process</b> <b>Shipping Risks &amp; Controls</b>	Order to Cash Shipping: What could go Wrong?	Order to Cash: Steps 9 – 15	
6 Oct 10	<b>Exam 1</b> <b>Order to Cash:</b> - Invoicing - Collections <b>Related Risks and Controls</b>	OTC: Invoicing and Collections – What could go Wrong?	Order to Cash: Steps 16 – 23	
7 Oct 17	<b>General IT vs. SAP Controls</b> <b>Security 1:</b> - Authorization Concept <b>Finance Process and Controls</b>	Finance and Accounting Processes: What could go Wrong?	Journal Entries: 1, 2	Order to Cash Exercise (October 13)
8 Oct 24	<b>Security Design</b> <b>Security 2:</b> - Roles <b>Finance Process and Controls</b>		Journal Entries: 3, 4	

Week	Topic	In-Class Activity	Assignment	Assignment Due
9 Oct 31	Security 3: - User Management Segregation of Duties (SOD)	Review Security Design: Your personal experiences, why so complex, what are your ?'s	Segregation of Duties (SOD): 1, 2	Journal Entries Exercise (October 27)
10 Nov 7	Data - Migration - Interface Security SOD & Sensitive Transaction Access: Real World Review	-	Segregation of Duties (SOD): 3, 4	
11 Nov 14	Exam 2 SAP Landscape: Instance and Clients Change Management Transport Management Program development Risk Control Matrix: Introduction	TBD	Risk Control Matrix: - Introduction - Identifying Risks	Segregation of Duties (SOD) (November 10)
<b>Fall (Thanksgiving) Break</b>				
12 Nov 28	Table Security Data Dictionary Controls Risk Control Framework: Role in Governance	If you were perspective customer or partner what questions would you ask SAP?	Risk Control Matrix: - Identify Controls - Link Controls and Risks	
13 Dec 5	SAP Futures (HANA) Emergency / Firefighter Access Powerful ID's and Roles Governance Risk and Controls (GRC) Module	-	Risk Control Matrix: - Complete Control Definitions	
14 Dec 12	Character vs. Controls Student Feedback	-	Risk Control Matrix: - Control Process Audit Details	
	Study Period			Final: Risk Control Matrix (December 15 5:00 PM)
Dec 19	<b>FINAL EXAM</b>			

For more details see the class blog:  
<http://community.mis.temple.edu/itacs5121fall16/>



### Additional Information

<p><b>Availability of Instructor</b></p>	<ul style="list-style-type: none"> <li>▪ Please feel free to contact me via e-mail with any issues related to this class. I will also be available at the end of each session. Please note that these discussions are to address questions/concerns but are <b>NOT</b> for helping students catch up on content they missed because they were absent. <b>Note:</b> I will respond promptly when contacted during the week and possibly Saturday. I do not respond on Sunday's.</li> <li>▪ I am available to meet personally with you:             <ul style="list-style-type: none"> <li>✓ Immediately after class</li> <li>✓ By appointment prior to class</li> <li>✓ By appointment by phone</li> </ul> </li> </ul>
<p><b>Attendance Policy</b></p>	<ul style="list-style-type: none"> <li>▪ Class discussion is intended to be an integral part of the course. Therefore, full attendance is expected by every student.</li> <li>▪ If you are absent from class, speak with your classmates to catch up on what you have missed.</li> </ul>
<p><b>Class Etiquette</b></p>	<ul style="list-style-type: none"> <li>▪ Please be respectful of the class environment.</li> <li>▪ Class starts promptly at the start time. Arrive on time and stay until the end of class.</li> <li>▪ Turn off and put away cell phones, pagers and alarms during class.</li> <li>▪ Limit the use of electronic devices (e.g., laptop, tablet computer) to class-related usage such as 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.</li> <li>▪ 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.</li> <li>▪ During class time speak to the entire class (or breakout group) and let each person "take their turn."</li> <li>▪ Be fully present and remain present for the entirety of each class meeting.</li> </ul>

### Acknowledgements

Many thanks to Rich Flanagan and John Calnan for their assistance in preparing this syllabus.