On the Design of a Graduate-Level Future-Driven Introduction to Information Systems Course Focused on Key Technical and Organizational Issues of the Digital Age

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This manuscript describes the design of a graduate-level information systems course offered at a regional public university. The course emphasizes the technical and organizational issues of the digital age, including artificial intelligence, cybersecurity, ethics, and social impact, with an explicit recognition that organizations are increasingly focused on shifts in the labor market and workplace brought about by new developments in generative artificial intelligence. Additionally, students are prepared for cybersecurity threats that pose organizational challenges. Emphasis is placed on teamwork and analysis and application of course concepts. The course goals, required text, readings, and assignments, as well as additional resources for instructors, are discussed.

Keywords: information systems, information technology, business education, graduate education, pedagogy, information management, artificial intelligence, cybersecurity, ethics, social impact

INTRODUCTION

The information systems course described in this paper is a required course for students enrolled in an MBA program and an MS in Information Systems Management offered in the College of Business at a regional public university in the Midwest region of the United States. The course covers traditional topics in an introductory information systems course while focusing on key technical and organizational issues of the digital age.

Key issues of the digital age include the challenges and opportunities inherent in new artificial intelligence models, as well as the challenges posed by cybersecurity threats. As organizational processes and strategies become increasingly reliant on information technology and complex systems, skill requirements will shift as the labor market and workplace adapt to rapid technological change. Skills such as teamwork and ethical thinking are essential to meet the demands of the digital age.

Several related topics and skills that have been identified as critical areas for student preparation in colleges of business are emphasized in the course including artificial intelligence (Coleman and Beta, 2024; De Cremer and Narayanan, 2023; Desai, 2024; Sollosy and McInerney, 2022; Xu and Babaian, 2021), cybersecurity (Raineri and Brennan, 2024; Trumbach et al., 2022; Yang, 2019; Yang, 2020; Yang and Wen, 2016), business ethics (Cornelius et al., 2007; Crane, 2004; De Los Reyes et al., 2017), soft skills (Schleuker et al., 2023; Tsekhmister et al., 2023), and teamwork skills (Feller, 1996; Hobson et al., 2014).

THE INFORMATION SYSTEMS COURSE

The course was developed as a required introductory course for graduate students studying business. For students enrolled in the MBA program, the course may be the students' sole exposure to course topics, while for students enrolled in the MS in Information Systems Management the course sets the stage for additional studies in the disciple and for professional work in the field. Because of this dual role, the course must cover technical, behavioral, and managerial issues in a way that will be beneficial to generalists and specialists seeking careers in business organizations. Table 1 presents the course description.

TABLE 1
COURSE DESCRIPTION

This course focuses on the management concepts and information technology needed to create effective information systems. Topics include: a survey of information technology, information systems and organizations, strategic information systems, management support systems, and ethical and social issues in information systems.

The goals listed in Table 2 are addressed in the course.

TABLE 2
GOALS OF THE COURSE

1. Explain technical, behavioral, managerial, and organizational aspects of database and information management.
2. Analyze and apply technical, behavioral, managerial, and organizational aspects of database and information management.
3. Explain technical, behavioral, managerial, and organizational aspects of data quality and data governance.
4. Analyze and apply technical, behavioral, managerial, and organizational aspects of data quality and data governance.
5. Explain technical, behavioral, managerial, and organizational aspects of telecommunications, the Internet, and wireless communications.
6. Analyze and apply technical, behavioral, managerial, and organizational aspects of telecommunications, the Internet, and wireless communications.
7. Explain technical, behavioral, managerial, and organizational aspects of workplace surveillance and monitoring.
8. Analyze and apply technical, behavioral, managerial, and organizational aspects of workplace surveillance and monitoring.
9. Explain technical, behavioral, managerial, and organizational aspects of cybersecurity.
10. Analyze and apply technical, behavioral, managerial, and organizational aspects of cybersecurity.
11. Explain technical, behavioral, managerial, and organizational aspects of knowledge management and machine learning.
12. Analyze and apply technical, behavioral, managerial, and organizational aspects of knowledge management and machine learning.
13. Explain technical, behavioral, managerial, and organizational aspects of artificial intelligence.
14. Analyze and apply technical, behavioral, managerial, and organizational aspects of artificial intelligence.
15. Explain technical, behavioral, managerial, and organizational aspects of information systems and decision making.
16. Analyze and apply technical, behavioral, managerial, and organizational aspects of information systems and decision making.

17. Explain technical, behavioral, managerial, and organizational aspects of business intelligence and analytics.
18. Analyze and apply technical, behavioral, managerial, and organizational aspects of business intelligence and analytics.
19. Explain ethical and social issues in information systems.
20. Analyze and apply ethical and social issues in information systems.
21. Analyze and apply principles of IT infrastructure to an industry.
22. Analyze and apply principles of systems to an industry.
23. Analyze and apply ethical and social issues of information systems to an industry.
24. Analyze and apply technical, behavioral, managerial, and organizational aspects of information system design, development, implementation and use.
25. Analyze and apply technical, behavioral, managerial, and organizational aspects of information systems project and risk management.
26. Analyze and apply technical, behavioral, managerial, and organizational aspects of information system impact on organizational strategy and effectiveness.

The primary text used in the course is presented in Table 3.

TABLE 3
PRIMARY TEXT USED IN THE COURSE

Laudon, K. C., Laudon, J. P., & Traver, C.G. (2025). *Management Information Systems: Managing the Digital Firm*, 18th edition, Pearson.

The first three units of the course deliver material focused on the following topics: (1) information technology infrastructure, (2) artificial intelligence and enhancing decision making, and (3) ethical and social issues related to information technology and information systems. Table 4 presents assigned course readings organized by these three units.

TABLE 4
ASSIGNED READINGS ORGANIZED BY THE FIRST THREE UNITS OF THE COURSE

Information Technology Infrastructure

Bhaskar, C. (2020). Why it's so hard for users to control their data. *Harvard Business Review Digital Article*, HBR.org, January 30, 2020, 1-8.

Bachman, A. (2018). Internet insecurity. *Harvard Business Review Digital Article*, HBR.org, May 15, 2018, 1-17.

Telang, R. (2021). Could ransomware attacks ultimately benefit consumers? *Harvard Business Review Digital Article*, HBR.org, August 2, 2021, 1-6.

Posey, C., & Shoss, M. (2022). Why employees violate cybersecurity policies. *Harvard Business Review Digital Article*, HBR.org, January 20, 2022, 1-7.

Muhly, F., Jordan, J., & Cialdini, R.B. (2021). Your employees are your best defense against cyberattacks. *Harvard Business Review Digital Article*, HBR.org, August 30, 2021, 1-8.

Sharton, B. R. (2021). Ransomware attacks are spiking, is your company prepared. *Harvard Business Review Digital Article*, HBR.org, May 20, 2021, 1-7.

Blau, A. (2017). The behavioral economics of why executives underinvest in cybersecurity. *Harvard Business Review Digital Article*, HBR.org, June 7, 2017, 1-5.

Bourdon, B. (2017). The avoidable mistakes executives continue to make after a data breach. *Harvard Review Digital Article*, HBR.org, November 20, 2017, 1-5.

Isles, A. (2023). Where to focus your company's limited cybersecurity budget. *Harvard Business Review Digital Article*, HBR.org, May 23, 2023, 1-8.

Renaud, K., Warkentin, M., & Westerman, G. (2023). From ChatGPT to HackGPT: Meeting the cybersecurity threat of generative AI. *Sloan Management Review*, April 2023, 1-5.

Artificial Intelligence and Enhancing Decision Making

Ng, A. (2021). AI doesn't have to be too complicated or expensive for your business. *Harvard Business Review Digital Article*, HBR.org, July 29, 2021, 1-6.

Ramge, T., & Mayer-Schonberger, V. (2023). Using ChatGPT to make better decisions. *Harvard Business Review Digital Article*, HBR.org, August 24, 2023, 1-6.

Agrawal, A., Gams. J., & Goldfarb, A. (2020). How to win with machine learning. *Harvard Business Review*, 98(5), 126-132.

Beane, M. (2019). Learning to work with intelligent machines. *Harvard Business Review*, 97(5), 140-148.

Bean, R. (2023). Has progress on data, analytics, and AI stalled at your company. *Harvard Business Review Digital Article*, HBR.org, January 30, 2023, 1-6.

Armstrong, B., & Shah, J. (2023). A smarter strategy for using robots. *Harvard Business Review*, 101, March 2023, 36-42.

Farahany, N.A. (2023). Neurotech at work. *Harvard Business Review*, 101, March 2023, 1-15.

Seymour, M., Lovailo, D., Riemer, K., Dennis, A.R., & Yuan, L.I. (2023). AI with a human face. *Harvard Business Review*, 101, March 2023, 1-17.

Information Technology and Systems Ethical and Social Issues

Blackman, R. (2023). How to avoid the ethical nightmares of emerging technology. *Harvard Business Review Digital Article*, HBR.org, May 9, 2023, 1-19.

Blackman, R. (2020). A practical guide to building ethical AI. *Harvard Business Review Digital Article*, HBR.org, October 16, 2020, 1-10.

Babic, B., Cohen, G. I., Evgeniov, T., & Gerke, S. (2021). When machine learning goes off the rails. *Harvard Business Review*, 99(1), 76-84.

Sharton, B.R. (2023). Your company's data is for sale on the dark web. Should you buy it back? *Harvard Business Review Digital Article*, HBR.org, January 4, 2023, 1-5.

Luca, M., & Morton, F.S. (2021). Do your digital design choices take advantage of customers? *Harvard Business Review Digital Article*, HBR.org, August 23, 2021, 1-9.

Anicich, E. (2022). Dehumanization is a feature of gig work, not a bug. *Harvard Business Review Digital Article*, HBR.org, June 23, 2022, 1-7.

Podder, S., Burden, A., Singh, S.K., & Maruca, R. (2020). How green is your software? *Harvard Business Review Digital Article*, HBR.org, September 18, 2020, 1-7.

Chakravorti, B., Bhalla, A., & Chaturvedi, R.S. (2021). How digital trust varies around the world. *Harvard Business Review Digital Article*, HBR.org, February 25, 2021, 1-10.

The course begins with three units, each comprising more than one module. The course then concludes with two single-module units: one focused on an applied individual project and one on a culminating paper, in which students evaluate their own and their teammates' individual contributions to the team projects in the first three units. Table 5 presents the topics covered and deliverables assigned in each course module.

TABLE 5
TOPICS COVERED AND DELIVERABLES ASSIGNED BY COURSE MODULE

Unit	Module	Topic	Deliverables
1	1	IT Infrastructure Part I – Databases and Information Management	• Quiz • Online Discussion
1	2	IT Infrastructure Part 2 – Telecommunications, the Internet, and Wireless	• Quiz • Online Discussion
1	3	IT Infrastructure Part 3 – IS Security	• Quiz • Online Discussion
1	4	IT Infrastructure – Conceptual Applications	• Quiz • Online Discussion
1	5	IT Infrastructure – Analysis and Application Team Exercise	• Analysis and Application Team Exercise for Unit 1
2	1	Systems Part 1 – Artificial Intelligence	• Quiz • Online Discussion
2	2	Systems Part 2 – Enhancing Decision Making	• Quiz • Online Discussion
2	3	Systems – Conceptual Applications	• Quiz • Online Discussion
2	4	Systems – Analysis and Application Team Exercise	• Analysis and Application Team Exercise for Unit 2
3	1	Ethical and Social Issues Part 1	• Quiz • Online Discussion
3	2	Ethical and Social Issues Part 2	• Quiz • Online Discussion
3	3	Ethical and Social Issues – Analysis and Application Team Exercise	• Analysis and Application Team Exercise for Unit 3
4	1	Building and Managing Information Systems - Individual Exercise	• Individual Exercise
5	1	Final Exercise: Peer Evaluation and Self-Reflection	• Final Exercise: Peer Evaluation and Self-Reflection

TEAM EXERCISES

The final module in each of the first three units of the course requires students to work in assigned teams to complete a collaborative exercise that focuses on the analysis and application of the course concepts covered in the unit to an industry of their choice. Table 6 presents the detailed requirements of this assignment. The requirements of the assignment are the same for each of the three units; however, a different industry is selected for each unit. Additionally, the course concepts analyzed and applied to the industry are different in each of the three team exercises.

TABLE 6
TEAM EXERCISE REQUIREMENTS FOR THE FIRST THREE COURSE UNITS

Project Objective
This Analysis and Application Team Exercise gives you an opportunity to work with a group of classmates to analyze and apply the conceptual concepts covered in this unit to an industry of your choice.

Specific Exercise Requirements

1. Select an industry from the "Industries at a Glance" document published by the U.S. Bureau of Labor Statistics. Your team will complete three analysis and application team exercises during our course. Your team will need to select a different industry for each of the three exercises.

2. Find resources related to the industry your team has selected for this assignment. You may use videos, movies, newspaper articles, magazine articles, books, and websites as appropriate for the industry you have selected. Your goal is to learn enough about the industry that you can provide an insightful analysis in the context of the conceptual concepts covered in the unit. Share the resources you find with the members of your team and discuss the material with the members of your team once everyone has read and/or watched the material. Keep a list of all the material used by your team for use in creating the reference list for the project.

3. Work with the members of your team to complete the deliverables listed and described below.
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Deliverables

A. **Title Page.** Identify the industry you have selected for this assignment as well as the names of your team members on the title page.
B. **Question and Answer Document.** Create a document with your team's answers to the questions listed below. Your answers should reflect your team's best thoughts and analysis on these questions and reflect the input of all members of your team for each question. Copy each question into your Question and Answer Document and then insert your team's answers after each question. Format the questions using a bold font so that it is easy to distinguish the questions and answers. A page limit (single-spaced, Times New Roman, 11 point font) for each question and answer is given in parentheses after the question below. Your team will need to write concisely to satisfy the page limit. You may write a little less for a question if you believe additional space is not needed to completely address a question, but please be careful to not exceed the page limit for a question. Insert a hard page break after each answer so that each question and its answer begin at the top of a page.

   All of the answers to these questions should be written in narrative form (i.e., sentences and paragraphs rather than bullet points). This will help your team develop its analysis and application in an in-depth and complete fashion.

   1. How are the concepts covered in this unit used or applied in the industry you selected for this assignment? (3 page maximum)
   2. Select three key organizations in the industry you selected for this assignment. Describe and explain how they are using the concepts covered in this unit. (3 page maximum)
   3. What are the five most important pieces of advice related to the concepts covered in this unit that you would offer organizations in the industry you have selected? (3 pages maximum)
   4. Identify three significant challenges currently facing organizations in the industry you have selected and explain how the concepts covered in this unit can be applied to meet these challenges. (3 pages maximum)

5. Apply your understanding of the course concepts covered in this unit to the creation of a set of "best practices" for the industry you have selected. State, describe, justify, and provide a convincing rationale for each of your best practices. (3 pages maximum)
6. Describe and evaluate the risks associated with the concepts covered in this unit of our course in the context of the industry you selected. (3 pages maximum)
7. Describe and evaluate the ethical and social implications of the course concepts covered in this unit in the context of the industry you have selected. Given these implications, propose a set of recommendations for employees working in the industry you selected, organizations in the industry, and society. (3 pages maximum)

C. **Industry Paper.** Your team will write an industry paper to inform readers in the industry about the results of your analysis and application of course concepts from this unit. The industry paper should present a synthesis of your analysis and application and be presented in an in-depth fashion so that actual and potential organizations and employees in the industry can position themselves for the future with respect to the concepts covered in this unit. The industry paper should be informed by the course readings and other materials in this unit as well as by the industry-related resources your team read, watched, and discussed as part of this assignment. You should use your Question and Answer Document along with further discussion by your team as you craft and write your Industry Paper.

Although your team will have read and discussed a collection of resources (both assigned within the course and additional background material on the industry your team selected), the purpose of the industry paper is NOT to directly report information and analysis written by other authors. Instead, the industry paper should present your team's original thinking, analysis, and application of course concepts from this unit as they apply to the industry your team has selected. You may very selectively cite material you read from other sources (e.g., no more than a citation or two per page), but be careful to use material from other sources only to support your team's original thinking, analysis and application of course concepts. Since you are documenting your team's original thinking rather than directly reporting information from other sources, the risk of accidental plagiarism is not high in this assignment; however, as always in academic assignments, please be careful to avoid accidental plagiarism if you refer to an idea or use a small amount of text from another source.

Your industry paper should be 8-10 pages of single-spaced text (Times New Roman, 11 point font), written in narrative form (i.e., sentences and paragraphs rather than bullet points), and organized to follow the outline below. Please use section headers to organize your writing.

D. **Reference List.** Please list all of the resources (videos, movies, newspaper articles, magazine articles, books, and websites) your team used to learn about the industry you selected for this assignment. You do not need to list the required textbook and other assigned course materials in your reference list. You may use either APA or MLA format for your reference list. Please use the title "References" for this part of the assignment. There is no minimum or maximum page length for the reference list.

Additional Guidelines for Deliverables

1. All four deliverables should be included in a single document that will be submitted for this assignment. Please insert a hard page break after each deliverable.
2. Please submit a single document in either Word or PDF format as your team's assignment submission. (There is no need to submit both a Word and a PDF document.)

3. All of the material written in the assignment will be original (i.e., the analysis and application will be created by members of your team rather than coming from another source), but please be conscious of avoiding accidental plagiarism if you refer to an idea or use a small amount of text from another source.
4. The Question and Answer Document and Industry Paper should be written in standard, narrative English and should be written in a concise, clear, professional, and polished style. Your team's writing should be easy to understand and enjoyable for the reader. Additionally your writing should not confuse your reader or leave your reader with questions.

Tips for Excellent Team Exercises

A. The team exercises are designed as collaborative exercises that give students an opportunity to engage with their teammates as they analyze and apply the course concepts for a unit in the course. It can be tempting to divide elements of the project work and assign them to individual members of the team. For example, one member of the team works on half the questions for the Question and Answer Document, another member of the team works on the other questions, another member drafts the industry paper, and so forth. This strategy is generally not as effective as one that takes advantage of opportunities for higher levels of collaboration and discussion and is not recommended. A good approach to this project work will include multiple discussions among team members focused on all aspects of the project work and collaboration across all aspects of the assignment.
B. The Question and Answer Document is designed to provide an opportunity for groups to achieve a common understanding of the selected industry in the context of the conceptual concepts from the unit. This document then serves as an input to the industry paper. There is no need, and it is generally not a good idea, to view the work on the Question and Answer Document and the Industry Paper as separate tasks. There is no need to develop a great deal of new material and analysis for the Industry Paper. Your team will first develop your analysis and application of the unit's concepts through your work on the Question and Answer Document and then craft the material into the Industry Paper.
C. For the most part, you should work on the Question and Answer Document and the Industry Paper sequentially. The Industry Paper will use the material developed in the Question and Answer Document, so it will be much easier to write the Industry Paper once the Question and Answer Document is (at least mostly) completed.
D. In general, it will be beneficial to work on this assignment throughout the modules of the unit associated with the assignment. Your team can collect, read and/or watch material, and meet regularly online throughout the unit. This strategy will give your team sufficient time to collaborate and will generally help your team analyze and apply the course concepts in sufficient depth.

Notes on Team Performance and Contribution

Please take and retain notes related to your contributions and the contributions of each of your teammates during the completion of this exercise so that you can easily complete the Peer Review and Self-Reflection exercise at the end of the course. You do not need to submit these notes with the assignment.

INDIVIDUAL EXERCISE

An individual exercise focused on analyzing an organizational information system project is also assigned in the course. Students work on this exercise throughout the course and submit it during the fourth unit.

TABLE 7
INDIVIDUAL EXERCISE

Project Objective
The Individual Exercise allows you to work independently to analyze and apply course material related to building and managing an information system in an organizational context of your choice.

Specific Project Requirements

A. Background Reading, Project Selection, and Interviewee Selection

Begin by reading Chapters 3, 13, 14, and 15 of our course textbook (*Management Information Systems*). These chapters cover the course concepts that you will use in your analysis and application in this project.

Second, select an organization in which you will be able to conduct interviews about an information system project. The design, development, and implementation activities associated with the project should have occurred during the past seven years. You will need to interview a minimum of four people who work in the organization to collect information that will be used in your project. You may interview more people if you like. You should interview a mix of people involved in the design, development, and implementation work and people who can provide input as users of the system. You may need to conduct preliminary interviews with people working in the organization in order to identify the information systems project you will focus on in your project.

B. **Interviews**

1. Conduct interviews with a minimum of four people who work in the organization to collect information that will be used in your project. You may interview more people if you like. You should interview a mix of people involved in the design, development, and implementation work and people who can provide input as users of the system. Your interviews should focus on the design, development, implementation and use of the information system you have selected to focus on in your project work. The items listed in Part C of the "Specific Project Requirements" section below should be used as you plan your interview protocol. You may conduct your interviews in-person or remotely.
2. Take detailed interview notes so you have a rich set of material to use in your analysis and application project work.
3. Your detailed interview notes will be included as an appendix in your project paper.

C. Project Analysis and Application

You will analyze and apply course concepts to the interview data collected during your interviews described in Section B above. The analysis and application work presented in your project paper should be informed by the course concepts presented in Chapters 3, 13, 14, and 15 of our course textbook (*Management Information Systems*). Your paper presenting your analysis and application should include the following sections and material.

Organizational and System Background

a. Describe the organizational context and information systems function in the organization.
b. Describe the purpose and functionality of the information system studied in your project.
c. Describe the goals of the information system project studied in your project.

System Development

a. Describe, analyze, and evaluate the system development process.
b. Describe, analyze, and evaluate the methodologies used for modeling and design in the system development project.
c. Describe, analyze, and evaluate the method used for building and/or acquiring the system.
d. Describe the effect of the information systems project on organizational change.
e. Describe issues and challenges during the design process.
f. Describe issues and challenges during the development and/or acquisition process.
g. Describe issues and challenges during the implementation process.
h. Describe and evaluate user training strategies, processes, and methods.
i. Describe issues and challenges during the post-implementation use of the information system.
j. Describe strengths and weaknesses of the design, development, implementation, and use of the information system.

Project Management

a. Describe, analyze, and evaluate the project management approach and methods used in the design, development, and implementation of the information system.
b. Describe issues and challenges related to project management during the design, development, and implementation of the information system.
c. Describe, analyze, and evaluate the organization's assessment and management of project risks during the design, development, and implementation of the information system.
d. Describe, analyze, and evaluate the role of users and user involvement during the design, development, and implementation of the information system.
e. Describe issues and challenges related to user involvement during the design, development, and implementation of the information system.

Organizational Strategy and Effectiveness

a. Discuss and evaluate the impact of the information system you are studying on the organization's strategy.
b. Discuss and evaluate the impact of the information system you are studying on organizational effectiveness.
c. Describe and analyze any global issues and challenges related to the design, development, and implementation of the information system.

Recommendations

a. Discuss your top four recommendations for the organization stemming from your analysis of the information systems project you have studied. State, describe in detail, and discuss the rationale for each of your recommendations.

Deliverables

Title Page. Identify the organization and information system project you have selected for this assignment and your name on the title page.

Paper. Your paper will cover the items listed in Part C of the "Specific Project Requirements" section above. Your paper should be 10-15 pages of single-spaced text (Times New Roman, 11 point font) written in narrative form (i.e., sentences and paragraphs rather than bullet points).

The paper should present your original thinking, analysis, and application of course concepts as they apply to the information systems project you have selected for your project work. There is no need to consult outside resources (other than chapters 3, 13, 14, and 15 of our

textbook). There is no need to explain the material covered in our textbook in your paper. For example, if a term is defined in our textbook, there is no need to define it in your paper. All of the material in your paper should be original, but please be conscious of avoiding plagiarism if you refer to an idea from the textbook. Additionally, please do not copy system documentation or other materials you collected and analyzed about the information systems project you are studying into your project paper.

Please use the following section headers to organize your paper.

Section 1: Organizational and System Background
Section 2: System Development
Section 3: Project Management
Section 4: Organizational Strategy and Effectiveness
Section 5: Recommendations

Appendix. Your appendix will include the detailed notes from all of your interviews.

FINAL EXERCISE

The final unit of the course focuses on a paper in which students evaluate the performance and contributions of members of their project teams from the first three units of the course. The detailed requirements of this paper are given in Table 8.

TABLE 8
FINAL EXERCISE: PEER EVALUATION AND SELF-REFLECTION

Assignment Objective

This assignment allows you to develop your managerial skills by evaluating the members of your team that completed the three Analysis and Application Team Exercises in our course and to reflect on your role and performance in the three Analysis and Application Team Exercises.

Specific Exercise Requirements

1. Your peer evaluation should describe and evaluate the performance and contributions of the members of your Analysis and Application Team Exercises other than yourself. This should cover all three of the Analysis and Application Team Exercises.
2. Your self-reflection should describe and evaluate your own performance in and contributions to the three Analysis and Application Team Exercises. Your self-reflection should also answer the following questions. (There is no need to copy the questions below into your paper.)
    a. What did you learn about your strengths and weaknesses as a result of completing the Analysis and Application Team Exercises?
    b. How can you (or how have you) applied what you learned about yourself by participating in the Analysis and Application Team Exercises to your work and career both now and in the future?
    c. In what ways did you help the members of your team develop their skills?
    d. What lessons related to question c above will you bring to your potential role as a manager and/or mentor to your colleagues in the future?
3. Please use a header to identify each person discussed in the peer evaluation and a separate header for your self-reflection.
4. There is no need to add an introduction or conclusion to your paper.

Deliverable

A. **Paper.** The deliverable of this assignment is a paper.
   1. Your paper should be single-spaced and use a Times New Roman, 11-point font.
   2. The total length of the peer evaluation portion of the assignment will vary depending on the number of people on your team. You should write a half page per person on your team (other than yourself).
   3. Your self-reflection should be two pages in length.
   4. Please insert a hard page break after the evaluation of each of your peers and begin your self-reflection at the top of a page.
   5. All of the parts of the assignment should be written in narrative form (sentences and paragraphs) rather than presenting information using bullet points. Please do NOT include numeric evaluations (e.g., 10/10) or grades (e.g., A+). Additionally, please do NOT create or find a team rating/evaluation instrument and use that as part or all of the work on the assignment.

RECOMMENDED CASES

The cases listed in Table 9 are recommended for application of course concepts.

TABLE 9
RECOMMENDED CASES FOR APPLICATION OF COURSE CONCEPTS

Topic	Case
Information Systems Security	Eisenmann, C. (2009). When hackers turn to blackmail. *Harvard Business Review*, 87(10), 39-42.
Artificial Intelligence	Gentile, M.C., Danks, D., & Harrell, M. (2022) Does facial recognition tech enhance security? *Harvard Business Review*, 2022, 1-6.
Machine Learning	Brie, B., Distelmans, T., Stouthuysen, K., Timverdonck, T., Grumiau, C., & Sudaman, T.M. (2022). Allianz: Optimizing customer acquisition strategy using machine learning. Ivy Publishing.
Green IT	Abraham, T. (2013). Launching and steering a green IT company: The case of Green Field software. *Journal of Information Technology Teaching Cases*, 3, 9-15.

SUGGESTED ADDITIONAL READINGS

In addition to the readings presented in Table 4, the manuscripts listed in Table 10 may be of interest to instructors developing and teaching similar courses. These manuscripts are organized by course topic.

TABLE 10
SUGGESTED ADDITIONAL READINGS FOR INSTRUCTORS BY COURSE TOPIC

Topic	Readings
Databases and Information Management	Smith, H. J., Dinev, T., & Xu, H. (2011). Information privacy research: An interdisciplinary review. *MIS Quarterly*, 35(4), 989-1015.
Databases and Information Management	Klein, B. D., Goodhue, D. L., & Davis, G. B. (1997). Can humans detect errors in data? Impact of base rates, incentives, and goals. *MIS Quarterly*, 21(2), 169-194.

Databases and Information Management	Moravec, P. L., Minas, R. K., & Dennis, A. R. (2019). Fake news on social media: People believe what they want to believe when it makes no sense at all. *MIS Quarterly*, 43(4), 1343-A13.
Databases and Information Management	Klein, B. D. (2001). Detecting errors in data: Clarification of the impact of base rate expectations and incentives. *Omega*, 29(5), 391-404.
Telecommunictions, the Internet, and Wireless	Cichy, P., Salge, T.O., & Kohli, R. (2021). Privacy concerns and data sharing in the Internet of things: Mixed methods evidence from connected cars. *MIS Quarterly*, 45(4), 1863-1892.
Telecommunictions, the Internet, and Wireless	Huang, K., Siegel, M., Pearlson, K., & Madnick, S. (2019). Casting the dark web in a new light. *MIT Sloan Management Review*, 61(1), 84-85.
Telecommunictions, the Internet, and Wireless	Frick, W. (2019). Fixing the Internet. *Harvard Business Review*, 97(4), 158-159.
Information Systems Security	Moody, G. D., Siponen, M., & Pahnila, S. (2018). Toward a unified model of information security policy compliance. *MIS Quarterly*, 42(1), 285-A22.
Information Systems Security	Cram, W. A., D'Arcy, J., & Proudfoot, J.G. (2019). Seeing the forest and the trees: A meta-analysis of the antecedents to information security policy compliance. *MIS Quarterly*, 43(2), 525-A24.
Information Systems Security	Liang, H., Xue, Y., Pinsonneault, A., & Wu, Y. (2019). What users do besides problem-focused coping when facing IT security threats: An emotion-focused coping perspective. *MIS Quarterly*, 43(2), 373-A18.
Artificial Intelligence	Van den Broek, E., Sergeeva, A., & Huysman, M. (2021). When the machine meets the expert: An ethnography of developing AI for hiring. *MIS Quarterly*, 45(3), 1557-1580.
Artificial Intelligence	Fugener, A., Grahl, J., Gupta, A., & Ketter, W. (2021). Will humans-in-the-loop become borgs? Merits and pitfalls of working with AI. *MIS Quarterly*, 45(3), 1527-1556.
Artificial Intelligence	Li, J., Li, M., Wang, X., & Thatcher, J.B. (2021). Strategic directions for AI: The role of CIOs and boards of directors. *MIS Quarterly*, 45(3), 1603-1644.
Decision Making	Dietuorst, B.J. (2017). When people don't trust algorithms. *MIT Sloan Management Review*, 59(1), 11-13.
Decision Making	Kahneman, D. (2022). Try to design an approach to making a judgment: Don't just go into it trusting your intuition. *Issues in Science and Technology*, 38(3), 23-26.
Decision Making	Shin, D., He, S., Lee, G.M., Whinston, A.B, Centintas, S., & Lee, K.-C. (2020). Enhancing social media analysis with visual data analytics: A deep learning approach. *MIS Quarterly*, 44(4), 1459-1492.
Ethical and Social Issues	Herwix, A., Haj-Bolouri, A., Rossi, M., Tremblay, M. C., Purao, S., & Gregor, S. (2022). Ethics in information systems and design science research: Five perspectives. *Communications of the Association for Information Systems*, 50(1), 589-616.
Ethical and Social Issues	Paltiel, M., Cheong, M., Coghlan, S., & Lederman, R. (2023). Approaches and models for teaching digital ethics in information systems courses – A review of the literature. *Australasian Journal of Information Systems*, 27, 10.3127/ajis.v27i0.4517.
Ethical and Social Issues	Spiekermann, S., Krasnova, H., Hinz, O., Baumann, A., Benlian, A., Gimpel, H., & Heimbch, I. (2022). Values and ethics in information systems. *Business & Information Systems Engineering*, 64(2), 247-264.

CONCLUSION

The course described in this manuscript is offered as a model that can be used as is or modified by interested faculty developing and teaching introductory graduate-level courses on information systems in MBA and Masters in Information Systems Management programs. The course focuses on key issues of the digital age, including artificial intelligence and cybersecurity. Key ethical and social impact issues are also strongly emphasized in the course. Interested faculty are invited to consider the course goals, readings, and assignments presented here and are welcome to adapt these materials to local conditions and student needs as they see fit.

REFERENCES

Abraham, T. (2013). Launching and steering a green IT company: The case of Green Field software. *Journal of Information Technology Teaching Cases*, *3*, 9–15.

Agrawal, A., Gams, J., & Goldfarb, A. (2020). How to win with machine learning. *Harvard Business Review*, *98*(5), 126–132.

Anicich, E. (2022, June 23). Dehumanization is a feature of gig work, not a bug. *Harvard Business Review Digital Article*, pp. 1–7.

Armstrong, B., & Shah, J. (2023, March). A smarter strategy for using robots. *Harvard Business Review*, *101*, 36–42.

Babic, B., Cohen, G.I., Evgeniov, T., & Gerke, S. (2021). When machine learning goes off the rails. *Harvard Business Review*, *99*(1), 76–84.

Bachman, A. (2018, May 15). Internet insecurity. *Harvard Business Review Digital Article*, pp. 1–17. HBR.org.

Bean, R. (2023, January 30). Has progress on data, analytics, and AI stalled at your company. *Harvard Business Review Digital Article*, pp. 1–6.

Beane, M. (2019). Learning to work with intelligent machines. *Harvard Business Review*, *97*(5), 140–148.

Bhaskar, C. (2020, January 30). Why it's so hard for users to control their data. *Harvard Business Review Digital Article*, pp. 1–8.

Blackman, R. (2020, October 16). A practical guide to building ethical AI. *Harvard Business Review Digital Article*, pp. 1–10.

Blackman, R. (2023, May 9). How to avoid the ethical nightmares of emerging technology. *Harvard Business Review Digital Article*, pp. 1–19.

Blau, A. (2017, June 7). The behavioral economics of why executives underinvest in cybersecurity. *Harvard Business Review Digital Article*, pp. 1–5.

Bourdon, B. (2017, November 20). The avoidable mistakes executives continue to make after a data breach. *Harvard Review Digital Article*, pp. 1–5.

Brie, B., Distelmans, T., Stouthuysen, K., Timverdonck, T., Grumiau, C., & Sudaman, T.M. (2022). *Allianz: Optimizing customer acquisition strategy using machine learning.* Ivy Publishing.

Chakravorti, B., Bhalla, A., & Chaturvedi, R.S. (2021, February 25). How digital trust varies around the world. *Harvard Business Review Digital Article*, pp. 1–10.

Cichy, P., Salge, T.O., & Kohli, R. (2021). Privacy concerns and data sharing in the Internet of things: Mixed methods evidence from connected cars. *MIS Quarterly*, *45*(4), 1863–1892.

Coleman, A., & Beta, K. (2024). The core competencies of future leaders: Opportunities and challenges of artificial intelligence for business schools. In M.T. Del Val Núñez, A. Yela Aránega, & D. Ribeiro-Soriano (Eds.), *Artificial Intelligence and Business Transformation. Contributions to Management Science*. Springer. https://doi.org/10.1007/978-3-031-58704-7_12

Cornelius, N., Wallace, J., & Tassabehji, R. (2007). An analysis of corporate social responsibility, corporate identity and ethics teaching in business schools. *Journal of Business Ethics*, *76*, 117–135.

Cram, W.A., D'Arcy, J., & Proudfoot, J.G. (2019). Seeing the forest and the trees: A meta-analysis of the antecedents to information security policy compliance. *MIS Quarterly*, *43*(2), 525–A24.
Crane, F.G. (2004). The teaching of business ethics: An imperative at business schools. *Journal of Education for Business*, *79*(3), 149–151. https://doi.org/10.3200/JOEB.79.3.149-151
De Cremer, D., & Narayanan, D. (2023). On educating ethics in the AI era: Why business schools need to move beyond digital upskilling, towards ethical upskilling. *AI Ethics*, *3*, 1037–1041.
De los Reyes, G., Kim, T.W., & Weaver G.R. (2017). Teaching ethics in business schools: A conversation on disciplinary differences, academic provincialism, and the case for integrated pedagogy. *Academy of Management Learning & Education*, *16*(2). https://doi.org/10.5465/amle.2014.0402
Desai, A. (2024). Exploring business schools' role in artificial intelligence education. *Technology Innovation*, *23*(1), 15–25.
Dietuorst, B.J. (2017). When people don't trust algorithms. *MIT Sloan Management Review*, *59*(1), 11–13.
Eisenmann, C. (2009). When hackers turn to blackmail. *Harvard Business Review*, *87*(10), 39–42.
Farahany, N.A. (2023, March). Neurotech at work. *Harvard Business Review*, *101*, 1–15.
Feller, J.W. (1996). Cooperative learning teams in information systems education. *The Data Base for Advances in Information Systems*, *27*(2), 44–60.
Frick, W. (2019). Fixing the Internet. *Harvard Business Review*, *97*(4), 158–159.
Fugener, A., Grahl, J., Gupta, A., & Ketter, W. (2021). Will humans-in-the-loop become borgs? Merits and pitfalls of working with AI. *MIS Quarterly*, *45*(3), 1527–1556.
Gentile, M.C., Danks, D., & Harrell, M. (2022) Does facial recognition tech enhance security? *Harvard Business Review*, pp. 1–6.
Herwix, A., Haj-Bolouri, A., Rossi, M., Tremblay, M.C., Purao, S., & Gregor, S. (2022). Ethics in information systems and design science research: Five perspectives. *Communications of the Association for Information Systems*, *50*(1), 589–616.
Hobson, C.J., Strupeck, D., Griffin, A., Szostek, J., & Rominger, A.S. (2014). Teaching MBA students teamwork and team leadership skills: An empirical evaluation of a classroom educational program. *American Journal of Business Education*, *7*(3), 191–212.
Huang, K., Siegel, M., Pearlson, K., & Madnick, S. (2019). Casting the dark web in a new light. *MIT Sloan Management Review*, *61*(1), 84–85.
Isles, A. (2023, May 23). Where to focus your company's limited cybersecurity budget. *Harvard Business Review Digital Article*, pp. 1–8.
Kahneman, D. (2022). Try to design an approach to making a judgment: Don't just go into it trusting your intuition. *Issues in Science and Technology*, *38*(3), 23–26.
Klein, B.D. (2001). Detecting errors in data: Clarification of the impact of base rate expectations and incentives. *Omega*, *29*(5), 391–404.
Klein, B.D., Goodhue, D.L., & Davis, G.B. (1997). Can humans detect errors in data? Impact of base rates, incentives, and goals. *MIS Quarterly*, *21*(2), 169–194.
Laudon, K.C., Laudon, J.P., & Traver, C.G. (2025). *Management Information Systems: Managing the Digital Firm* (18th edition). Pearson.
Li, J., Li, M., Wang, X., & Thatcher, J.B. (2021). Strategic directions for AI: The role of CIOs and boards of directors. *MIS Quarterly*, *45*(3), 1603–1644.
Liang, H., Xue, Y., Pinsonneault, A., & Wu, Y. (2019). What users do besides problem-focused coping when facing IT security threats: An emotion-focused coping perspective. *MIS Quarterly*, *43*(2), 373–A18.
Luca, M., & Morton, F.S. (2021, August 23). Do your digital design choices take advantage of customers? *Harvard Business Review Digital Article*, pp. 1–9.
Moody, G.D., Siponen, M., & Pahnila, S. (2018). Toward a unified model of information security policy compliance. *MIS Quarterly*, *42*(1), 285–A22.

Moravec, P.L., Minas, R.K., & Dennis, A.R. (2019). Fake news on social media: People believe what they want to believe when it makes no sense at all. *MIS Quarterly*, *43*(4), 1343–A13.
Muhly, F., Jordan, J., & Cialdini, R.B. (2021, August 30). Your employees are your best defense against cyberattacks. *Harvard Business Review Digital Article*, pp. 1–8.
Ng, A. (2021, July 29). AI doesn't have to be too complicated or expensive for your business. *Harvard Business Review Digital Article*, pp. 1–6.
Paltiel, M., Cheong, M., Coghlan, S., & Lederman, R. (2023). Approaches and models for teaching digital ethics in information systems courses – A review of the literature. *Australasian Journal of Information Systems*, *27*. DOI: 10.3127/ajis.v27i0.4517
Podder, S., Burden, A., Singh, S.K., & Maruca, R. (2020, September 18). How green is your software? *Harvard Business Review Digital Article*, pp. 1–7.
Posey, C., & Shoss, M. (2022, January 20). Why employees violate cybersecurity policies. *Harvard Business Review Digital Article*, pp. 1–7.
Raineri, E.M., & Brennan, E.A. (2024). An extension of small business cybersecurity into the classroom and community. *Journal of Higher Education Theory and Practice*, *24*(8).
Ramge, T., & Mayer-Schonberger, V. (2023, August 24). Using ChatGPT to make better decisions. *Harvard Business Review Digital Article*, pp. 1–6.
Renaud, K., Warkentin, M., & Westerman, G. (2023, April). From ChatGPT to HackGPT: Meeting the cybersecurity threat of generative AI. *Sloan Management Review*, pp. 1–5.
Schleuker, K., Poza-Lujan, J.L., Varis, K., Caggiano, V., & Lloret, N. (2023). Presentation of the preliminary soft skills indicator (3Si) model to teachers and curriculum planners of business schools - A sample from Finland. *Journal of Higher Education Theory and Practice*, *23*(13).
Seymour, M., Lovailo, D., Riemer, K., Dennis, A.R., & Yuan, L.I. (2023, March). AI with a human face. *Harvard Business Review*, *101*, 1–17.
Sharton, B.R. (2021, May 20). Ransomware attacks are spiking, is your company prepared. *Harvard Business Review Digital Article*, pp. 1–7.
Sharton, B.R. (2023, January 4). Your company's data is for sale on the dark web. Should you buy it back? *Harvard Business Review Digital Article*, pp. 1–5.
Shin, D., He, S., Lee, G.M., Whinston, A.B, Centintas, S., & Lee, K.-C. (2020). Enhancing social media analysis with visual data analytics: A deep learning approach. *MIS Quarterly*, *44*(4), 1459–1492.
Smith, H.J., Dinev, T., & Xu, H. (2011). Information privacy research: An interdisciplinary review. *MIS Quarterly*, *35*(4), 989–1015.
Sollosy, M., & McInerney, M. (2022). Artificial intelligence and business education: What should be taught. *The International Journal of Management Education*, *20*, 00720.
Spiekermann, S., Krasnova, H., Hinz, O., Baumann, A., Benlian, A., Gimpel, H., & Heimbch, I. (2022). Values and ethics in information systems. *Business & Information Systems Engineering*, *64*(2), 247–264.
Telang, R. (2021, August 2). Could ransomware attacks ultimately benefit consumers? *Harvard Business Review Digital Article*, pp. 1–6.
Trumbach, C.C., Payne, D.M., & Walsh, K. (2022). Cybersecurity in business education: The 'how to' in incorporating education into practice. *Industry and Higher Education*, *37*(1). https://doi.org/10.1177/09504222221099389
Tsekhmister, Y., Stetsenko, N., Volyk, O., Gumennykova, T., & Sharov, O. (2023). Forecast of educational trends in the role of 'soft skills' for the professional development of future specialists in the conditions of distance learning: The challenges of our time. *Journal of Higher Education Theory and Practice*, *23*(10).
Van den Broek, E., Sergeeva, A., & Huysman, M. (2021). When the machine meets the expert: An ethnography of developing AI for hiring. *MIS Quarterly*, *45*(3), 1557–1580.
Xu, J.J., & Babaian, T. (2021). Artificial intelligence in business curriculum: The pedagogy and learning outcomes. *The International Journal of Management Education*, *19*, 100550.

Yang, S.C. (2019). A curriculum model for cybersecurity master's program: A survey of AACSB-accredited business schools in the United States. *Journal of Education for Business*, *94*(8), 520–530.
Yang, S.C. (2020). A meta-model of cybersecurity curriculums: Assessing cybersecurity curricular frameworks for business schools. *Journal of Education for Business*, *96*(2), 99–110.
Yang, S.C., & Wen, B. (2016). Toward a cybersecurity curriculum model for undergraduate business schools: A survey of AACSB-accredited institutions in the United States. *Journal of Education for Business*, *92*(1), 1–8.