Information Technology & Data Analytics
MASY1-GC 1240 | 102 | Spring 2024 | 01/22/2024 -05/06/2024 | 3 Credit
Modality: In-person
Course Site URL: https://brightspace.nyu.edu

General Course Information
Name/Title: Peter Peng, Adjunct Instructor, He/Him/His
NYU Email: peter.peng@nyu.edu
Class Meeting Schedule: 01/22/2024 -05/06/2024 | Monday | 06:20pm - 08:55pm
Class Location: TBD
Office Hours: By appointment via e-mail. Meetings can be scheduled to take place in-person after class, or remotely via Zoom.

Description
In this course, the organization is examined as a system, and the roles of information and computers are explored to facilitate the specification, development, implementation and maintenance of information technology for supporting organization decision-making and strategic planning in today's information age. Students apply the information management principles, techniques, and best practices to analyze and manage an organization's information technology activities. The course examines the role of information within organizations, provides an overview of modern hardware and software platforms and systems development architectures and introduces students to e-commerce databases and data warehouses. It also covers computer crime and forensics and how people and information can be protected through information security and privacy.

Prerequisites
N/A

Learning Outcomes
At the conclusion of this course, students will be able to:
- Assess organizational information technology system requirements
- Develop plans to acquire, develop, and deploy information technology systems for the firm
- Propose improvements to business processes efficiency and effectiveness through the use of information technology
- Create plans to utilize current and emerging information technologies better aligned with individual, organizational, and societal needs
- Develop business proposals including IT elements to achieve an organization's strategic and tactical objectives

Communication Methods
Be sure to turn on your NYU Brightspace notifications and frequently check the "Announcements" section of the course site. This will be the primary method I use to communicate to the entire class with information, updates, and other announcements related

to the course. To contact me, send me an email or a message through NYU Brightspace. I will typically respond within 24-48 hours.

Credit students must use their NYU email to communicate. Non-degree students do not have NYU email addresses. Brightspace course mail supports student privacy and FERPA guidelines. The instructor will use the NYU email address to communicate with students. All email inquiries will be answered within 24-48 hours.

Structure | Method | Modality
This course is In-person and will meet once a week on Monday. NYU Brightspace is the learning management system we will use. Log-in to Brightspace frequently for course announcements, assignments & Zoom access. At times, you may be required to meet outside the lecture hours with your group members to complete the group project.

Expectations

Learning Environment
You play an important role in creating and sustaining an intellectually rigorous and inclusive classroom culture. Respectful engagement, diverse thinking, and our lived experiences are central to this course, and enrich our learning community.

Participation
Students are expected to be active participants in the learning experience as opposed to passive receptacles for information. Respect for the opinions of others and openness to new ideas is vital for all participants. For successful completion of this course, students will master material presented via lectures and demos, assigned in readings, communicated through discussions and from research activities.

Participation means contributing to the discussion versus simply speaking in class or offering a random comment in the online forum; it also means actively listening and building on the questions and discussion points of your classmates. As graduate students, you are expected to conduct yourselves in a professional manner and engage and collaborate with your classmates.

It is expected that each student will be prepared to participate in lively, intelligent, and professional discussions during and outside of the classroom. Reading assignments and homework must be completed as indicated so that everyone will benefit from an in-depth discussion of topics covered.

Assignments and Deadlines
Complete readings and submit assignments prior to class as assigned by the instructor and listed in this syllabus. All students must complete all course assignments. You should come to each class fully prepared, having read the assigned readings and completed the assignment(s), and actively engage in class discussions. All assignments must be uploaded to the folder on Brightspace labeled "Assignments." The number of the assignments and their due dates are on the course outline that follows. Assignment details and due dates may be

subject to change and will be announced in class and/or via Brightspace. Assignment due dates are final and non-negotiable.

All written assignments are to be in a professional and business standard.
Unless previously approved due to illness or other emergency, assignments that are submitted late will automatically receive a 10% reduction in maximum grade for each 24-hour period the assignment is late, not counting any additional deductions from the assignment itself.

Course Technology Use
Establishing an environment of mutual respect and exchange in the classroom requires a commitment to presence in discussions and full attention to the course materials presented in class. In the interest of ensuring that attention stays focused on your classmates and class discussions, use of laptops, cellphones, and other electronic devices should be limited during the session unless required for a class activity.

Assignments will require the use of technology (e.g., laptop, computer lab) for learning, research, and assignment submission purposes.

Feedback and Viewing Grades
I will provide timely meaningful feedback on all your work via our course site in NYU Brightspace. You can access your grades on the course site Gradebook.

Attendance
Students are expected to attend all on-line class sessions. Excused absences are granted in cases of documented serious illness, family emergency, religious observance, or civic obligation. In the case of religious observance or civic obligation, this should be reported in advance. Unexcused absences from sessions may have a negative impact on a student's final grade. Students are responsible for assignments given during any absence.

If for some reason you will not be in class, you must notify the instructor prior to the scheduled session if you will not be attending and the reason.

Each unexcused absence or being late may result in a student's grade being lowered by a fraction of a grade. A student who has three unexcused absences may earn a Fail grade.

Refer to the SPS Policies and Procedures page for additional information about attendance.

Textbooks and Course Materials

Required Text - Information Technology for Management: Driving Digital Transformation to Increase Local and Global Performance, Growth and Sustainability, 12th edition
Authors: Efraim Turban, Carol Pollard, Gregory Wood
ISBN-13: 978-1119702900
ISBN-10: 1119702909
Published April 2021

https://www.wiley.com/en-us/Information+Technology+for+Management%3A+Driving+Digital+Transformation+to+Increase+Local+and+Global+Performance%2C+Growth+and+Sustainability%2C+12th+Edition-p-9781119702917
or
https://www.amazon.com/Information-Technology-Management-Transformation-Sustainability/dp/1119702909

Grading | Assessment
Individual chapter assignments (45%) – Individual Grades
There will be a total of 9 individual homework assignments based off the topics covered in the textbook readings. Unless stated otherwise, readings and assignments are to be completed prior to the start of the class so that when the topics are covered during the lecture, students should already have a basic understanding of the material and be prepared to discuss these topics on a more advanced level. Refer to the Course Schedule section for due dates and time. 45% of total grade (9-chapter assignments, each worth 5%)

Group Project (45%) – Group and Individual Grades
Students will be divided into groups for the purpose of the group project and each group will be assigned to a stakeholder of a company. Groups will be expected to interview the stakeholder to understand their current (real or hypothetical) challenges and/or technology needs. Based on the interviews, the students will use what they have learned during the course to create a proposal with their group to address the company's IT challenges/needs. Additional information and specific details of the group project will be provided at a later point in class. Both innovative content and effective communication will be critical to success. This will be assessed based on several dimensions, including the ability of the team to generate a range of ideas, listen respectfully to different perspectives, distribute work fairly, resolve differences, and communicate effectively. Each group will be evaluated on the quality of your recommendations through the group's written proposal and presentations.

Class Participation (10%) – Individual Grade
Each student is expected to actively participate during each class session. Opportunities to participate include contributing to classroom discussions by moving the discussion and analysis forward or build on other comments. Additionally, there may be break-out group exercises during the class where students will be expected to actively participate and contribute within the group as well as make informal presentations to the class based on group discussions.

Participation grades will be broken up into 2 halves of the class each worth 5% (First half: Sessions 1-7 and Second Half: Sessions 8-14) for a total combined Class Participation grade contributing 10% to the overall grade.

Individual Assignments (Individual Grade) – 9 assignments	45%
Group Project (Group and Individual Grades)	45%
Class Participation (Individual Grade)	10%
Total	100%

See the [“Grades” section of Academic Policies](#) for the complete grading policy, including the letter grade conversion, and the criteria for a grade of incomplete, taking a course on a pass/fail basis, and withdrawing from a course.

Course Outline

Start/End Dates: 01/22/2024 -05/06/2024 | Mondays
Time: 06:20pm - 08:55pm
No Class Date(s): Monday, 2/19/2024 and 03/18/2024
Special Notes: Spring Break 03/18/24 - 03/24/24

Session 1 - 01/22/24
Session Topic: Course Introduction, Syllabus Review, and Digital Transformation
Required Readings (to be completed prior to class): Chapter 1
Student Learning Objectives:

> IT impact on global economy
> Explain the role of IT in improving business processes. Understand the concepts of business process reengineering and competitive advantage
> Describe how IT is disrupting the way that companies operate, the IT megatrends that are driving organizational performance, growth, and sustainability
> Technology mega trends

Session 2 – 01/29/24
Session Topic: Information Systems, IT Infrastructure, and the Cloud
Required Readings (to be completed prior to class): Chapter 2
Individual Assignment 1 Due
Student Learning Objectives:

> Information System concepts and framework
> IT infrastructure, IT architecture, and enterprise architecture (EA) and their roles in guiding IT growth and sustaining long-term performance and growth
> Understand the different types of data centers, cloud computing and cloud services, and how they each add value to an organization

Describe the different types of virtualization and the ways in which an organization can benefit from it

Session 3, 02/05/24
Session Topic: Data and Databases Part 1: Data Management, Data Warehouses, and Data Governance
Required Readings (to be completed prior to class): Chapter 3
Individual Assignment 2 Due
Student Learning Objectives:

> Describe the fundamentals of data management and how database management systems, including blockchain technology, help companies improve performance
> Identify the differences between a database, a data warehouse, and a data mart and why a company would move from a database to a data warehouse or data mart

Describe the importance of data governance in providing trusted data available when and where needed and why master data management (MDM) is an important data governance initiative

Explain the concept of information management and why it is important for an organization to follow good information management practices

Define the terms electronic document, electronic record, and electronic content and how the technologies that manage them are being used to make organizations more effective and efficient

Session 4, 02/12/24
Session Topic: Data and Databases Part 2: Databases and Introduction to SQL
Individual Assignment 3 Due
Student Learning Objectives:
Continuation of previous class
Key characteristics of relational databases
Key characteristics of non-relational databases
Introduction to SQL
Database Relationships

Session 5, 02/26/24
Session Topic: Network, the Internet of Things (IoT), and Edge Computing
Required Readings (to be completed prior to class): Chapter 4
Individual Assignment 4 Due
Student Learning Objectives:
Describe the different types of wired networks and their principal components and how a computer network supports basic business functions
Identify the different generations of wireless networks, the standards that drive them and the technologies that support them
Explain the growth in mobile data traffic and the benefits companies can gain from the Internet of Things (IoT) and edge computing
Describe the importance of evaluating the quality of a network and the current status of Net Neutrality.

Session 6, 03/04/24
Session Topic: Data Privacy and Cyber Security Part 1
Required Readings (to be completed prior to class): Chapter 5
Individual Assignment 5 Due
Student Learning Objectives:
Data Privacy
Main data privacy concerns, define the privacy paradox, and describe how data privacy regulations are protecting consumers
Data breaches
Major sources of cyberthreats and cyberattacks

Session 7, 03/11/24
Session Topic: Data Privacy and Cyber Security Part 2

Group Assignment Due: Group Project Overview Submission and Presentation
Student Learning Objectives:
>   Continuation of previous class
>   Preventative and reactive security measures

Session 8, 03/25/24
Session Topic: Business Intelligence, Data Science, and Data Analytics
Required Readings (to be completed prior to class): Chapter 6
Individual Assignment 6 Due
Student Learning Objectives:
>   Social search technologies
>   Descriptive data analytics
>   Predictive data analytics
>   Prescriptive data analytics
>   Tools and techniques to support all levels of data analytics
>   Explain how big data and advanced data analytics work together to predict organizational performance in the future and prescribe actionable insights

Session 9, 04/01/24
Session Topic: Social Media and Semantic Web Technology, Omnichannel Retailing, E-commerce, and Mobile Commerce Technology
Required Readings (to be completed prior to class): Chapters 7 & 8
Individual Assignment 7 Due
Student Learning Objectives:
>   Explain how technological developments that define Web 2.0 created a fundamentally new experience for users
>   Describe how search engines work and identify ways that businesses gain competitive advantage by using search technology effectively
>   Explain how Semantic Web technology enhances the accuracy of search engines results and how businesses optimize their websites to take advantage of this emerging technology
>   Explain how recommendation engines enhance user experience by predicting and recommending Web content, products, and services that might appeal to them
>   Describe how omnichannel retailing is changing the nature of shopping for consumers and the role convenience plays in determining where shoppers choose to shop
>   Recognize how mobile payment methods benefit both consumers and retailers.

Session 10, 04/08/24
Session Topic: Systems Development, IT Service Management, and Project, Program, and Portfolio Management
Required Readings (to be completed prior to class): Chapter 13
Individual Assignment 8 Due

Session 11, 04/15/24
Session Topic: Functional Business Systems & Enterprise Systems

Required Readings (to be completed prior to class): Chapters 9 & 10
Group Assignment Due: Project Checkpoint Outline Submission and In-class Presentation
Student Learning Objectives:

> Identify the four traditional functional business units and how business-driven functional business systems support functional and cross-functional process improvement
> Describe six types of enterprise systems and the major drivers and challenges associated with migrating to them
> Define the purpose of an ERP and the key factors that lead to a successful ERP implementation
> Supply chain management (SCM) flows and major capabilities of SCM systems
> Define the five phases of the customer relationship management (CRM) process and the role of a CRM system in customer acquisition, retention, and customer lifetime value

Session 12, 04/22/24
Session Topic: Artificial Intelligence, Robotics, Quantum Computing
Required Readings (to be completed prior to class): Chapter 11
Individual Assignment 9 Due
Student Learning Objectives:

> Artificial intelligence (AI)
> Generative AI (ChatGPT) & Adaptive AI
> Ethical issues associated with AI
> Robotics
> Work automation
> AI-powered sentiment analysis, predictive analytics, and content management systems
> Quantum computing

Session 13, 04/29/24
Required Readings (to be completed prior to class): Chapter 12
Student Learning Objectives:

> IT sourcing strategies
> Establishing strategic IT plans
> Strategic technology trends
> Cover additional IT related topics and trends

Session 14, 05/06/24
Session Topic: Group Final Project Presentations
Group Assignment Due: Group Project Final Paper Submission
Group Assignment Due: Presentation Submission
Individual Assignment Due: Individual Project Analysis/Assessment

NOTES:

The syllabus may be modified to better meet the needs of students and to achieve the learning outcomes.

The School of Professional Studies (SPS) and its faculty celebrate and are committed to inclusion, diversity, belonging, equity, and accessibility (IDBEA), and seek to embody the IDBEA values. The School of Professional Studies (SPS), its faculty, staff, and students are committed to creating a mutually respectful and safe environment (*from the SPS IDBEA Committee*).

New York University School of Professional Studies Policies

1. Policies - You are responsible for reading, understanding, and complying with University Policies and Guidelines, NYU SPS Policies and Procedures, and Student Affairs and Reporting.

2. Learning/Academic Accommodations - New York University is committed to providing equal educational opportunity and participation for students who disclose their dis/ability to the Moses Center for Student Accessibility. If you are interested in applying for academic accommodations, contact the Moses Center as early as possible in the semester. If you already receive accommodations through the Moses Center, request your accommodation letters through the Moses Center Portal as soon as possible (mosescsa@nyu.edu | 212-998-4980).

3. Health and Wellness - To access the University's extensive health and mental health resources, contact the NYU Wellness Exchange. You can call its private hotline (212-443-9999), available 24 hours a day, seven days a week, to reach out to a professional who can help to address day-to-day challenges as well as other health-related concerns.

4. Student Support Resources - There are a range of resources at SPS and NYU to support your learning and professional growth. For a complete list of resources and services available to SPS students, visit the NYU SPS Office of Student Affairs site.

5. Religious Observance - As a nonsectarian, inclusive institution, NYU policy permits members of any religious group to absent themselves from classes without penalty when required for compliance with their religious obligations. Refer to the University Calendar Policy on Religious Holidays for the complete policy.

6. Academic Integrity and Plagiarism - You are expected to be honest and ethical in all academic work. Moreover, you are expected to demonstrate how what you have learned incorporates an understanding of the research and expertise of scholars and other appropriate experts; and thus recognizing others' published work or teachings—whether that of authors, lecturers, or one's peers—is a required practice in all academic projects.

Plagiarism involves borrowing or using information from other sources without proper and full credit. You are subject to disciplinary actions for the following offenses which include but are not limited to cheating, plagiarism, forgery or unauthorized use of documents, and false form of identification

Turnitin, an originality detection service in NYU Brightspace, may be used in this course to check your work for plagiarism.

Read more about academic integrity policies at the NYU School of Professional Studies on the Academic Policies for NYU SPS Students page.

7. Use of Third-Party Tools - During this class, you may be required to use non-NYU apps/platforms/software as a part of course studies, and thus, will be required to agree to the "Terms of Use" (TOU) associated with such apps/platforms/software.

These services may require you to create an account but you can use a pseudonym (which may not identify you to the public community, but which may still identify you by IP address to the company and companies with whom it shares data).

You should carefully read those terms of use regarding the impact on your privacy rights and intellectual property rights. If you have any questions regarding those terms of use or the impact on the class, you are encouraged to ask the instructor prior to the add/drop deadline.