Information Technology & Data Analytics
MASY1-GC 1240 | 100 | Spring 2024 | 01/22/2024 -05/06/2024 | 3 Credits
Modality: In-Person
Course Site URL: https://brightspace.nyu.edu/

General Course Information
Name/Title: George Pefanis, Adjunct Assistant Professor, He/Him/His
NYU Email: gp204@nyu.edu
Class Meeting Schedule: 01/22/2024 -05/06/2024 | Mondays | 6:20 pm - 8:55 pm
Class Location: Bldg:MIDC Room 527
Office Hours: Google Meet Upon Request

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 information critical to your success in the course. To contact me, send me an email. I will respond within 24 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 hours.

Structure | Method | Modality
There are 14 session topics in this course. The session topics are organized into three (3) areas of study: 1) Database / Data Warehouse, 2) Internet Technologies, and 3) Project and Product Management Practices.

Active learning experiences and small group projects are key components of the course. Assignments, papers, and exams will be based on course materials (e.g., readings, videos), lectures, and class discussions. Course sessions will be conducted synchronously on NYU Zoom, which you can access from the course site in NYU Brightspace.

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
You are integral to the learning experience in this class. Be prepared to actively contribute to class activities, group discussions, and work outside of class.

Assignments and Deadlines
The class will be divided into teams for the purpose of the action-learning project and assignments. Your grading for this course will be based on your class participation and the required assignments for this course.

The required assignments will include:
Action Learning Project (35% - Group Project): Each team will be presented with an action learning project. You will present your recommendations throughout the semester. You will be evaluated on the operation of your team and the quality of your recommendations. Both innovative content and effective communication will be critical to success. To be individually assessed each team member must present on the topic they are assigned as group leader:
Case for Change
Issue Identification
Solution research
Recommendations
Presentation

The individual deliverable for each student will represent 30% of his/her overall grade, and the remaining 5% will represent the group work of the team. 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.

Details:
Action Learning Project 1 - Build a relation database for a fictitious company that sells imported and domestic cheeses to local supermarkets. Due: March 4, 2024.
Action Learning Project 2 - Name each type of person involved in each phase of SDLC and condense the seven phases of SDLC to five. Discuss the risks? Due: April 1, 2024.
Action Learning Project 3 - Upon completion of internet conversation, students must break down what happens between submitting an on-line order and receiving a confirmation number. Due: April 22, 2024.
Final Project (30%): Must be submitted to meet the Final Project requirements. Due: May 6, 2024.

Build a website:
Build a full website using HTML5 and CSS3. JavaScript/jQuery is optional. The site must be built using Bootstrap. The site must use images and have a minimum of 5 pages. The site will be accepted via a link or a zip file. You cannot use Wix nor WordPress.

Class Participation (10%): Each session will demand significant class participation and will happen in the form of team participation. Students are expected to offer a different and unique, but relevant, perspective OR contribute to moving the discussion and analysis forward OR build on other comments. This must occur at least once per class time.

Discussion Forum Participation (25%): Throughout the course discussion forums will be used to enhance the quality of our learning both collectively and individually. Your participation must be thoughtful, qualitative, and comprehensive. If you limit your contribution to reciting the facts and offering conclusions without meaningful analysis and critical thinking you will be relegated to a low grade for that week's submission. Additionally, you must exchange thoughtful feedback and insights on each other's ideas in your forum participation. The forum is designed to develop your critical thinking skills and to develop your ability to persuade, advocate, influence and disagree effectively in the virtual environment. Hence, if you post an excellent primary post detailing your views on the subject but do not actively engage with your peers on their posts, you will be relegated to a B-. You must demonstrate your ability to present a valuable position on the question posed, defend that position, and then engage with your peers on their positions to earn an A grade.

Discussion Forums schedule as it applies to both Primary posts and Subsequent posts is as follows:

    January 29   February 5   6pm   Topic: Null in Database?
    February 19   February 26 6pm   Topic: Cloud?
    March 4   March 11   6pm   Topic: IaaS vs PaaS vs SaaS
    March 25   April 1   6pm   Topic: Microservices and Containers
    April 8 April 15   6pm   Topic: Agile vs Waterfall?
    April 15   April 22   6pm   Topic: Scrum and Kanban

Course Technology Use
We will utilize multiple technologies to achieve the course goals. I expect you to use technology in ways that enhance the learning environment for all students. All class sessions require use of Zoom. All class sessions require use of technology (e.g., laptop, computer lab) for learning 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 (excused absence) 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: Information Systems
Version 8.0.1 by John Gallaugher Adapted by George Pefanis (Custom Mashup)
Pages: 546 - Published July 9th, 2021
List Price - Digital $39.95, PDF $20, Physical Copy $25
Digital ISBN - 978-1-4533-3977-0 | Color ISBN - 978-1-4533-3976-3
https://students.flatworldknowledge.com/course/2597302

Grading | Assessment
Your grade in this course is based on your performance on multiple activities and assignments. Since all graded assignments are related directly to course objectives and learning outcomes, failure to complete any assignment will result in an unsatisfactory course grade. All written assignments are to be completed using APA format and must be typed and double-spaced. Grammar, punctuation, and spelling will be considered in grading. Please carefully proof-read your written assignments before submitting them for a grade. I will update the grades on the course site each time a grading session has been completed— typically three (3) days following the completion of an activity.

DESCRIPTION	PERCENTAGE
Action Learning Project Teamwork	5%
Action Learning Project Individual Topic	30%
Final Project	30%
Class Participation	10%
Discussion Forums (6)	25%
_____	_____
TOTAL POSSIBLE	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: 6:20 pm - 8:55 pm ET
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
Setting the Stage: Technology and the Modern Enterprise
Student Learning Outcomes:
1. Tech's Tectonic Shift: Radically Changing Business Landscapes
2. It's Your Revolution
3. Geek Up—Tech Is Everywhere and You'll Need It to Thrive
4. The Pages Ahead
5. Define management information systems (MIS) and information technology (IT) and describe their relationship.

Outline of Topics
• Information as a key resource
• People as a key resource
• Information technology as a key resource
• Creating the business vision for information technology
• Information technology in your life
• Porter's five forces model

Required Reading – Chapter 1

Session 2 – 01/29/24
Strategy and Technology: Concepts and Frameworks for Achieving Success
Student Learning Outcomes:
1. Barriers to Entry, Technology, and Timing
2. Powerful Resources
3. Key Framework: The Five Forces of Industry Competitive Advantage
4. Describe the role of value chains in identifying value-added and value-reducing processes.

5.   Define supply chain management (SCM) systems and describe their strategic and competitive opportunities and IT support.
6.   Define customer relationship management (CRM) systems and describe their strategic and competitive opportunities and IT support.
7.   Define business intelligence (BI) systems and describe their strategic and competitive opportunities and IT support.

Outline of Topics
- Supply chain management
- Customer relationship management
- Business intelligence

Required Reading – Chapter 2
Assignments:
- **Forum: Topic: Null in Database? - Due: 02/05/24**

Session 3, 02/05/24
Data and Competitive Advantage: Databases, Analytics, AI, and Machine Learning
Student Learning Outcomes:
1.   Data, Information, and Knowledge
2.   Where Does Data Come From?
3.   Data Rich, Information Poor
4.   Data Warehouses, Data Marts, Data Lakes, and the Technology behind "Big Data"
5.   The Business Intelligence Toolkit
6.   Describe business intelligence and its role in an organization.
7.   Artificial Intelligence, Big Data, and Machine Learning: It's Now Everywhere!
8.   Ethical Information Systems: Understanding Risks and Building More Responsible Technology
9.   Data Asset in Action: Technology and the Rise of Walmart
10.   Differentiate between databases and data warehouses with respect to their focus on online transaction processing and online analytical processing.
11.   List and describe the key characteristics of a relational database.

Outline of Topics
- The relational database models
- Database management system tools
- Data warehouses and data mining
- Information ownership

Required Reading – Chapter 3

Session 4, 02/12/24
Session Four: Store Data Analysis
Student Learning Outcomes:
1.   Business Intelligence
2.   More Databases
3.   Cross Sell Analysis

Outline of Topics
- Decisions, decisions, decisions
- Decision support systems

- • Artificial intelligence

Required Reading – Chapter 4

Forum: Topic: Cloud? - Due: 02/26/24

Session 5, 02/26/24
A Manager's Guide to the Internet and Telecommunications
Student Learning Outcomes:
1. Internet 101: Understanding How the Internet Works
2. Getting Where You're Going
3. Last Mile: Faster Speed, Broader Access
4. Learn HTML5 / CSS3 / JavaScript
Outline of Topics
- • TCP/IP
- • Encryption
- • Cookies
- • HTTP Request / Response

Required Reading – Chapter 6
Assignments: Action Learning Project 1 – Due: 03/04/24
- • **Build a relation database for a fictitious company that sells imported and domestic cheeses to local supermarkets.**

Session 6, 03/04/24
Google in Three Parts: Search, Online Advertising, and an Alphabet of Opportunity
Student Learning Outcomes:
1. Understanding Search
2. Understanding the Increase in Online Ad Spending
3. Search Advertising
4. Ad Networks: Distribution beyond Search
5. More Ad Formats and Payment Schemes
6. Customer Profiling and Behavioral Targeting
7. Profiling and Privacy
8. Search Engines, Ad Networks, and Fraud
9. The Battle Unfolds
10. Learn HTML5 / CSS3 / JavaScript
Outline of Topics
- • Search Engine Optimization (SEO)
- • Required Reading – Chapter 7, 8 and 9
Assignments:
- • **Forum: Topic: IaaS vs PaaS vs SaaS - Due: 03/11/24**

Session 7, 03/11/24
User Centered Design: Design an iPhone App / App Wireframes / App Mockups
Student Learning Outcomes:
1. MIS and Marketing

2. App Wireframe
3. The Golden Circle
4. C.R.A.P. Principles of Graphic Design
5. Creating an App Mockup

Required Reading – Chapter 10 and 11

Session 8, 03/25/24
Introduction to Project Management / Project Life Cycle, Process Groups, and the Organizational Structure of a Project
Student Learning Outcomes:
1. Project Management Defined
2. Project Defined
3. Project Context
4. Key Skills of the Project Manager
5. Introduction to the Project Management Knowledge Areas
6. Project Management Life Cycle and Process Groups
7. Project Organization
8. Using the Darnall-Preston Complexity Index to Measure Organizational Complexity

Required Reading – Chapter 12, 13 and 14
Assignment:

- **Action Learning Project 2 – Due: 04/01/24**
- **Upon completion of internet conversation, students must break down what happens between submitting an on-line order and receiving a confirmation number.**
- **Forum: Topic: Microservices and Containers - Due: 04/01/24**

Session 9, 04/01/24
Starting a Project / Project Schedule Management / Project Quality Management
Student Learning Outcomes:
1. Project Selection
2. Project Charter
3. Project Scope
4. Project Start-Up
5. Alignment Process
6. Communications Planning
7. Types of Schedules
8. Project Schedule Management
9. Critical Path and Float
10. Managing the Schedule
11. Project Scheduling Software
12. Developing the Quality Section of the Project Management Plan
13. Quality and Statistics
14. Development of Quality as a Competitive Advantage

15.   Relevance of Quality Programs to Project Quality
16.   Planning and Controlling Project Quality
17.   Assuring Project Quality
Required Reading – Chapter 15

Session 10, 04/08/24
Agile / Scrum / Lean / Kanban
Student Learning Outcomes:
•   Learn how Scrum and Kanban is used to deliver value to organizations
•   Outline of Topics
    o   Lean the values and principles of Agile and Lean
    o   Learn Scrum
    o   Learn the Kanban Method
    o   Understand their Change Management Principles
    o   Understand the difference between Cycle Time and Lead Time
    Forum: Topic: Agile vs Waterfall? - Due: 04/15/24

Session 11, 04/15/24
Information Systems in Your Life: Types of Systems and Careers
Student Learning Outcomes:
1.   What Are Information Systems?
2.   Designing Information Systems
3.   The Big Picture
4.   Define ethics and describe the two factors that affect how you make a decision concerning an ethical issue.
5.   Describe the ways in which information on your computer or network is vulnerable
Required Reading – Chapter 16, 17, and 18
Assignments:
•   **Action Learning Project 3 – Due: 04/22/24**
•   **Name each type of person involved in each phase of SDLC and condense the seven phases of SDLC to five. Discuss the risks?**
Forum: Topic: Scrum and Kanban - Due: 04/22/24

Session 12, 04/22/24
Understanding Software: A Primer for Managers
Information Security: Barbarians at the Gateway (and Just About Everywhere Else)
Student Learning Outcomes:
1.   Operating Systems
2.   Application Software: Apps, Desktop Products, and Enterprise Systems
3.   Distributed Computing, Web Services, and APIs: The Platform Builders
4.   Software Development Methodologies: From Waning Waterfall to Ascending Agile, plus a Sprint through Scrum
5.   Beyond the Price Tag: Total Cost of Ownership and the Cost of Tech Failure
6.   Why Is This Happening? Who Is Doing It? And What's Their Motivation?
7.   Where Are Vulnerabilities? Understanding the Weaknesses
8.   Taking Action

Forum: Topic: Business Agility - Due: 04/29/24

Session 13, 04/29/24
Software in Flux: Open Source, Cloud, Virtualized, and App-Driven Shifts
Student Learning Outcomes:
1. Open Source
2. Why Open Source?
3. Examples of Open-Source Software
4. Why Give It Away? The Business of Open Source
5. Defining Cloud Computing
6. Software in the Cloud: Why Buy When You Can Rent?
7. SaaS: Not without Risks

Session 14, 05/06/24
Software in Flux: Open Source, Cloud, Virtualized, and App-Driven Shifts
Student Learning Outcomes:
1. Understanding Cloud Computing Models: PaaS, IaaS, and Motivations and Risks
2. Clouds and Tech Industry Impact
3. Virtualization: Software That Makes One Computer Act Like Many
4. Apps and App Stores: Further Disrupting the Software Industry on Smartphones, Tablets, and Beyond
5. Make, Buy, or Rent

Assignments:
- **Final Project – Due: 05/06/24**

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.