Information Technology & Data Analytics

MASY1-GC 1240-103| Fall 2022 | 9/12/2022 - 12/12/2022 | Mondays | 3 Credits
Modality: In-Person
Course Site URL: https://brightspace.nyu.edu/

General Course Information

Name/Title: Rajeev Maharaj, Adjunct Professor, Pronouns (dropdown).
NYU Email: rm2966@stern.nyu.edu
Class Meeting Schedule: 9/12/2022 - 12/12/2022 | Mondays / 2:00 pm – 4:35 pm ET
Class Location: Bldg:MIDC Room:1022
Office Hours: Students will have an opportunity to schedule via phone or email.

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

Sample Text
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.

Students have the opportunity to add their pronouns, as well as the pronunciation of their names, into Albert. Students can have this information displayed to faculty in Albert, Brightspace, and other NYU systems. Students can also opt out of having their pronouns viewed by their instructors.

https://www.nyu.edu/students/student-information-and-resources/registration-records-and-graduation/forms-policies-procedures/change-of-student-information/pronouns-and-name-pronunciation.html

Structure | Method | Modality

This course is In-person and will meet once a week on Monday. Brightspace is the learning management system we will use. Weekly lesson and Forums will be posted frequently throughout the course. Students should check the course site often during the week.

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.

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
Lessons have been created for each of our 14 sessions. They each contain a mix of required content and assignments. Assignments and readings must be performed and are due on the dates indicated in the Lesson or Assignment. Please be sure to complete all of the content and assignments by the dates specified in order to receive credit. Missed assignments will lower the student's grade based on the percentage of the grade allocable to it. Late assignments will not be permitted without advanced permission from the professor. No credit will be assigned for unexcused late assignments.

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.

IT Service Desk
(212)-998-3333
24 hours a day, 7 days a week
Email: AskIT@nyu.edu

Zoom Support
- NYU Zoom Guide for Students
- Make sure you are using NYU Zoom to log-in for class
- Check the NYU Zoom site often for updates. (To update Zoom, you can also open from your desktop and click menu, then "Check for Updates.")

Brightspace Support
- Log-in to the Brightspace platform or visit the Student Training website.
- Video on how to Navigate the Bright Space Learning Environment

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 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.

University Calendar Policy on Religious Holidays:

https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/university-calendar-policy-on-religious-holidays.html

Students who join the course during add/drop are responsible for ensuring that they identify what assignments and preparatory work they have missed and complete and submit those per the syllabus.

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

Textbooks and Course Materials

List required and recommended resources. Be sure to include the following information for each:

- Textbook: Turban, Pollard, Wood; Information Technology for Management, 12th Wiley, April 2021, ISBN:978-1-119-70290-0
- Case Study: Duhigg, Charles; How Companies Learn Your Secrets, 2012, The New York Times Magazine. https://www.nytimes.com/2012/02/19/magazine/shopping-habits.html

Students can purchase these items through the NYU Bookstore.

- **Textbook and course pack are available from the NYU bookstore at: <http://shopnyu.com/>.**

Grading | Assessment

Examinations
Two short tests will be conducted, in sessions 7 and 14. These tests will be during class sessions. The tests will be non-cumulative and cover the material covered in the first and last half of the course, respectively.

Individual Project
There will be an individual project in this course. The project will be to develop a comprehensive analysis and response to specific questions posed for a case:
• Duhigg, Charles; How Companies Learn Your Secrets, 2012, The New York Times Magazine. https://www.nytimes.com/2012/02/19/magazine/shopping-habits.html
The specifics and format will be discussed in more detail in class and detailed on the course
website. The assignment will be due for Session 13.

DESCRIPTION	PERCENTAGE
Participation (in-class, online and in groups)	5%
Completion of assignments specified in Lessons	25%
Individual Project	20%
Test 1	25%
Test 2	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

Course Outline

Start/End Dates: 9/12/2022 - 12/12/2022 | Mondays
Time: 2:00 pm - 4:35 pm ET
No Class Date(s): Choose an item.
Special Notes: Legislative Monday: Classes will meet according to a Monday schedule

Session 1 - 09/12/22

Introduction

- Define management information systems (MIS) and describe the three important organizational resources within it—people, information, and information technology.
- Describe how to use break-even analysis to assess the financial impact of information technology.
- Describe how to use Porter's Five Forces Model to evaluate the relative attractiveness of and competitive pressures in an industry.
- Compare and contrast Porter's three generic strategies and the run-grow-transform framework as approaches to the development of business strategy.

Session 2 – 09/19/22

Role of MIS & IT

- Define supply chain management (SCM) systems and describe their strategic and competitive opportunities.
- Define customer relationship management (CRM) systems and describe their strategic and competitive opportunities.
- Explain the significance of enterprise resource planning (ERP) software as the integration of functional software systems.
- Define social media and describe a few of its many dimensions that make it important in the business world.

Session 3, 09/26/22

Structuring Data

- List and describe the key characteristics of a relational database.
- Define the five software components of a database management system.
- List and describe the key characteristics of a data warehouse.
- Define the five major types of data-mining tools in a data warehouse environment.
- List key considerations in information ownership in an organization.

Session 4, 10/03/22

 IT Supported Decision making

- Compare and contrast decision support systems and geographic information systems.
- Describe the decision support role of specialized analytics like predictive analytics and text analytics.
- Describe the role and function of an expert system in analytics.
- Explain why neural networks are effective decision support tools.
- Define genetic algorithms and the types of problems they help solve.
- Describe data-mining agents and multi-agent systems as subsets of intelligent agents and agent-based technologies.

Session 5, 10/10/22

<u>Data Analytics</u>

- Define of data analytics and how it fits with the concepts of business intelligence and data analysis that we have already discussed.
- Provide a practical roadmap for implementing analytics in a big data environment.
- Discuss some of the pitfalls that you might find.
- Describe the evolution and future directions of analytics

Session 6, 10/17/22

<u>E-Commerce</u>

- Define and describe the nine major e-commerce business models.
- Identify the differences and similarities among customers and their perceived value of products and services in the B2B and B2C e-commerce business models.
- Compare and contrast the development of a marketing mix for customers in the B2B and B2C e-commerce business models.
- Summarize the various ways of moving money in the world of e-commerce and related issues.
- Discuss some major trends that are impacting both the e-commerce business world and society in general.

Session 7, 10/24/22

<u>Test 1</u>

- Test on content and reading for first half of the course.

Session 8, 10/31/22

<u>System Development One</u>

- Define the traditional systems development life cycle (SDLC) and describe the seven major phases within it.
- Compare and contrast the various component-based development methodologies.
- Describe the self-sourcing process as an alternative to the traditional systems development life cycle.
- Discuss the importance of prototypes and prototyping within any systems development methodology.
- Describe the outsourcing environment and how outsourcing works.

Session 9, 11/07/22

<u>System Development Two</u>

- Identify software development methods.
- Describe three development methodologies.

- Compare and contrast Waterfall and Agile development methods.
- Describe Agile method and Scum in detail.
- Perform case study.

Session 10, 11/14/22

IT Outside the Enterprise

- Describe how a service-oriented architecture can be used as a philosophical approach to help the organization of the future meet all its IT-related needs.
- Define and describe the various hardware and software infrastructure considerations in an organization.
- Describe cloud computing, its various implementations, and its advantages.
- Compare and contrast commonly used metrics for assessing the success of IT systems and IT-related initiatives.
- Describe business continuity planning (BCP) and its phases.

Session 11, 11/21/22

Information Security & Privacy

- Define ethics and describe the two factors that affect how you make a decision concerning an ethical issue.
- Define and describe intellectual property, copyright, Fair Use Doctrine, and pirated software.
- Define privacy and describe ways in which it can be threatened.
- Describe the ways in which information on your computer or network is vulnerable and list measures you can take to protect it.

Session 12, 11/28/22

Emerging Trends

- Define the various types of technologies that are emerging as we move toward physiological interaction with technology.
- Define the various types of technologies that are emerging as we move toward physiological interaction with technology.
- Describe the emerging trends of Near Field Communication, Bluetooth, Wi-Fi, smartphones, and RFID, as they relate to the wireless environment.
- Define and describe emerging technologies that, while purely technology, can and will impact the future.

Session 13, 12/05/22

Individual Project

- Individual project
- Course Summary

Session 14, 12/12/22

Test 2

- Test on content and reading for second half of the course.

IMPORTANT OUTLINE DATES:

Session	Date	Topic(s)	IT for Mgmt Readings	Assignments
1	09/12/22	Introduction	Chapter 1	
2	09/19/22	Information Systems, IT infra, and the cloud	Chapter 2	Videos, Forum postings
3	09/26/22	Data Management	Chapter 3	Case study
4	10/03/22	Data Privacy and Cyber Security	Chapter 5	Supplemental readings, Videos
5	10/10/22	Data Science	Chapters 6	Forum postings, Case study, Supplemental reading, Videos
6	10/17/22	E-Commerce	Chapter 8	Supplemental readings, videos
7	10/24/22	Test 1		
8	10/31/22	Functional Business Systems	Chapter 9	Forum postings, Case study, Videos, Supplemental reading
9	11/07/22	Enterprise Systems	Chapter 10	Supplemental reading, Videos
10	11/14/22	IAI, Robotics and Quantum Computing	Chapter 11	Case study, Supplemental reading
11	11/21/22	IIT Strategy	Chapter 12	Case study, Supplemental reading
12	11/28/22	Systems Dev and Project Management	Chapter 13	Forum postings, Supplemental reading
13	12/05/22	IT Ethics and Local and Global Sustainability		Forum postings, Individual project
14	12/12/22	Test 2		

--All assignments and due dates subject to change—

At the discretion of the faculty, the syllabus may be modified to better meet the needs of the students and to achieve the learning outcomes established in the syllabus.

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. <u>Use of Third-Party Tools</u> - 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.