**Information Technology & Data Analytics**

**MASY1-GC 1240-101 | Fall 2024 | 9/4/2024 - 12/4/2024 | Wednesdays | 3 Credits**

**Modality:** In-Person

**Course Site URL:** https://brightspace.nyu.edu/

**General Course Information**

**Name/Title:** Fred Kauber, Adjunct Instructor

**NYU Email:** [fbk2015@nyu.edu](mailto:fbk2015@nyu.edu)

**Class Meeting Schedule:** 9/4/2024 - 12/4/2024

**Class Location:** 181 Mercer St (Paulson Center) Room 255 Loc: Washington Square

**Office Hours:** Students will have an opportunity to schedule via email or phone (914-953-3127). Meetings are by appointment.

**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](https://www.nyu.edu/servicelink/KB0018507) 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 initially with a text (see contact info) follow up if urgent and 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. I will use the NYU email address to communicate with students.

**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. Course sessions will be conducted synchronously on NYU Zoom, which you can access from the course site in [NYU Brightspace](https://brightspace.nyu.edu/).

**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 advance 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. Class sessions may 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 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.

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](https://www.sps.nyu.edu/homepage/student-experience/policies-and-procedures.html) for additional information about attendance.

**Textbooks and Course Materials**

The recommended text for this course is **optional**; all required reference material will be addressed in class and supplemental reading assignments will be provided as required from topical industry sources. Students with little prior background in Information Technology may find the following recommended text helpful as a primer; an outline of helpful reading topics in this text is provided for each session:

**Management Information Systems: Managing the Digital Firm,** 17th Edition, by Kenneth C. Laudon and Jane P. Laudon, Pearson Hardcover, 648 Pages, Published 2021

* https://www.amazon.com/Managing-Information-Systems-Digital-2-downloads-ebook/dp/B08S7FZHVR/
* List Price: $89.99
* ISBN: 978-0136971276

## Recommended Readings

* CIO Magazine (https://www.cio.com): published by CIO Communications, Inc. Framingham, MA.
* InformationWeek (https://www.informationweek.com): published by CMP Media, LLC, Manhasset, NY
* Computerworld (https://www.computerworld.com): Framingham, MA
* InfoWorld (https://www.infoworld.com): published by IDG International Data Group, San Francisco, CA
* Software Development Times (https://www.sdtimes.com): published by BZ Media LLC, Oyster Bay, NY
* New York Times Technology Section and Supplements

**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

**Grading Policy**

**Action Learning Project:**

**Team Work 10%**

**Individual Topic 30%**

**Midterm Exam: 20%**

**Final Exam: 20%**

**Class Participation: 20%**

**100%**

See the [Grades” section of Academic Policies](https://www.sps.nyu.edu/homepage/student-experience/policies-and-procedures.html#Graduate1) 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:** 9/4/2024 - 12/4/2024 | Wednesdays

**Time:** 6:20 pm - 8:55 pm ET

No Class Date(s): N/A

**Special Notes:** N/A

Course assignments should be submitted via Brightspace.

## Week One & Two: Information Technology and Business Applications

* Session 1 (09/04/24): Course Introduction; Technology Adoption Case Study
* Session 2 (09/11/24): Technology Adoption Theories, Factors, and Tools

**Student Learning Outcomes:**

1. Define management information systems (MIS) and information technology (IT) and describe their relationship.
2. Validate information as a key resource and describe both personal and organizational dimensions of information.
3. Explain why people are the most important organizational resource, define their information and technology literacy challenges, and discuss their ethical responsibilities.
4. Describe the important characteristics of information technology (IT) as a key organizational resource.
5. Define competitive advantage and illustrate the role of information technology in supporting competitive advantages and business vision.
6. Discuss the impacts information technology can and will have on your life.
7. Describe how to use Porter’s Five Forces Model to evaluate the relative attractiveness of an industry.
8. Describe the role of value chains in identifying value-added and value-reducing processes.
9. Define supply chain management (SCM) systems and describe their strategic and competitive opportunities and IT support.
10. Define customer relationship management (CRM) systems and describe their strategic and competitive opportunities and IT support.
11. Define business intelligence (BI) systems and describe their strategic and competitive opportunities and IT support.
12. Define integrated collaboration environments (ICEs) and describe their strategic and competitive opportunities and IT support.

**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
* The value chain
* Supply chain management
* Customer relationship management
* Business intelligence
* Integrated collaboration environments

**Recommended Reading –** Chapters 1, 2 and 3 – Due Session 2

## Week Three & Four: Database Management and Business Intelligence

* Session 3 (09/18/24) : Foundations of DB Management / BI
* Session 4 (09/25/24): Intelligent Automation

**Student Learning Outcomes:**

1. Describe business intelligence and its role in an organization.
2. Differentiate between databases and data warehouses with respect to their focus on online transaction processing and online analytical processing.
3. List and describe the key characteristics of a relational database.
4. Define the five software components of a database management system.
5. List and describe the key characteristics of a data warehouse.
6. Define the four major types of data-mining tools in a data warehouse environment.
7. List key considerations in information ownership.
8. Define the decision support system, list its components, and identify the type of application it’s suited to.
9. Define geographic information systems and state how they differ from other decision support systems
10. Define artificial intelligence and list the different types that are used in businesses.
11. Define expert systems and describe the types of problems to which they are applicable.
12. Define neural networks and fuzzy logic and the uses of these AI tools.
13. Define genetic algorithms and list the concepts on which they are based and the types of problems they solve.
14. Define intelligent agents, list the four types, and identify the types of problems they solve.
15. Define agent-based modeling and swarm intelligence.

**Outline of Topics**

* The relational database model
* Database management system tools
* Data warehouses and data mining
* Information ownership
* Decisions, decisions, decisions
* Decision support systems
* Geographic information systems
* Artificial intelligence
* Expert systems
* Neural networks and fuzzy logic
* Genetic algorithms
* Intelligent agents
* Multi-agent systems and agent-based modeling

**Recommended Reading –** Chapters 6, 11 and 12 – Due Session 4

## Week Five & Six: Systems Development, Infrastructure, and Integration

* Session 5 (10/02/24) : Systems Infrastructure
* Session 6 (10/09/24) : Application Architecture and Development

**Student Learning Outcomes:**

1. List the seven steps in the systems development life cycle (SDLC) and associated activities for each step.
2. Describe the four systems development methodologies.
3. Define the role of outsourcing.
4. List and describe the three different forms of outsourcing.
5. Describe business process outsourcing (BPO).
6. Describe prototyping and profile an example of a prototype.
7. Describe the advantages of prototyping.
8. Define what an enterprise system is.
9. Describe what an enterprise resource planning (ERP) system is.
10. List and describe the seven “ilities.”
11. List the key traits that an IT infrastructure should exhibit.
12. Describe the difference between the four types of information technology infrastructures.
13. Explain the difference between backup and recovery.
14. Describe the purpose of a disaster recovery plan.
15. Explain the need for system integration

**Outline of Topics**

* The systems development life cycle
* Systems development methodologies
* Outsourcing
* Prototyping
* End-user development
* Information systems infrastructure
* Information technology infrastructure
* Integrating the enterprise

**Recommended Reading –** Chapters 5, 7 and 13 – Due: Session 6

**Action Learning Project Team 1** – Due: Session 5

**Action Learning Project Team 2** – Due: Session 6

## Week Seven & Eight: Electronic Commerce

* Session 7 (10/16/24): Ecommerce Lifecycle Part 1
* Session 8 (10/23/24) : Ecommerce Lifecycle Part 2

**Student Learning Outcomes:**

1. Define and describe the two major e-commerce business models (Business to Business and Business to Consumer.
2. Describe the emerging role of e-marketplaces in B2B e-commerce.
3. Identify the differences and similarities among customers and their perceived value of products and services in the B2B and B2C e-commerce business models.
4. Compare and contrast the development of a marketing mix for customers in the B2B and B2C e-commerce business models.
5. Summarize the various ways of moving money in the world of e-commerce and related issues.

**Recommended Reading –** Chapter 10 – Due Session 8

**MidTerm Exam –** Due: Session 7

**Action Learning Project Team 3** – Due: Session 8

## Week Nine & Ten: Business Process Management and Information Security

* Session 9 (10/30/24): Business Process Management
* Session 10 (11/06/24): Information Security

**Student Learning Outcomes:**

1. Describe the emerging trends and technologies that will have an impact on the changing of the Internet.
2. Define the various types of technologies that are emerging as we move toward physiological interaction with technology.
3. Describe technological innovations and trends that will increase portability and mobility.
4. Describe the emerging trends of cell phones and RFID as they relate to the wireless environment.
5. Define ethics and describe the two factors that affect how you make a decision concerning an ethical issue.
6. Define and describe the intellectual property, copyright, Fair Use Doctrine, and pirated and counterfeit software.
7. Define privacy and describe ways in which it can be threatened.
8. Describe the ways in which information on your computer or network is vulnerable
9. Define risk management and risk assessment and describe the seven security measures that companies can take to protect their information.

**Outline of Topics**

* The changing internet
* Software-as-a-service
* Push, not pull technologies and personalization
* Voice over internet protocol (VOIP)
* Physiological interaction
* Automatic speech recognition
* Virtual reality
* Cave automatic virtual environments
* Biometrics
* Ethics

Two factors that determine how you decide ethical issues

Guidelines for ethical computer system use Intellectual property

* Privacy
  + Privacy and other individuals
  + Identity theft
  + Privacy and employees
  + Privacy and consumers
  + Privacy and government agencies
  + Laws on privacy
* Security
  + Security and Employees
  + Security and Outside Threats
  + Security Precautions

**Recommended Reading –** Chapter 8 and 9 – Due Session 10

**Action Learning Project 4** – Due Session 10

## Week Eleven & Twelve: Emerging Trends and Technologies

* Session 11 (11/13/24): Electronic Payment and Cryptocurrency
* Session 12 (11/20/24): Digital Transformation

**Student Learning Outcomes:**

1. Describe the emerging trends and technologies that are transforming payments and financial services globally.
2. Define the relative advantages and disadvantages of specific payment technologies and their application to business domains.
3. Describe the technological, organizational, and regulatory forces that are driving the need for organizations to embrace digital transformation.
4. Identify best practices used by leading organization to successfully manage digital transformation.
5. Describe the opportunities represented by new business models based upon emerging digital technologies.

## Week Thirteen & Fourteen: Synthesis and Review of All Topics

* Session 13 (11/27/24): Review of Cumulative Course Topics
* Session 14 (12/04/24): Final Exam

**Student Learning Outcomes:**

1. Describe the emerging trends and technologies that will have an impact on the changing of the Internet.
2. Demonstrate comprehensive knowledge and understanding of course material in the final exam.

**Outline of Topics**

* Technology Adoption
* Database Design and Management
* Intelligent Automation and AI
* Systems Infrastructure Elements and Design
* Application Architecture and Design
* Ecommerce Lifecycle
* Business Process Management
* Information Security
* Electronic Payments
* Digital Transformation

*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](https://www.sps.nyu.edu/homepage/about-us/idbea/about-idbea.html)).

**New York University School of Professional Studies Policies**

1. Policies - You are responsible for reading, understanding, and complying with [University Policies and Guidelines](http://www.nyu.edu/about/policies-guidelines-compliance.html), [NYU SPS Policies and Procedures](http://sps.nyu.edu/academics/academic-policies-and-procedures.html), and [Student Affairs and Reporting](https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/student-services.html).

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](https://www.nyu.edu/students/communities-and-groups/student-accessibility.html). If you are interested in applying for academic accommodations, contact the [Moses Center](https://www.nyu.edu/students/communities-and-groups/student-accessibility/academic.html) 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](https://www.nyu.edu/students/communities-and-groups/student-accessibility.html) as soon as possible ([mosescsa@nyu.edu](mailto: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](https://www.nyu.edu/students/health-and-wellness/wellness-exchange.html). 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](https://www.sps.nyu.edu/homepage/student-experience/resources-and-services.html).

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](https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/university-calendar-policy-on-religious-holidays.html) 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](https://www.nyu.edu/servicelink/KB0018471), 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](https://www.sps.nyu.edu/homepage/student-experience/policies-and-procedures.html) 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.