

## Information Technology & Data Analytics

**MASY1-GC 1240 | 201 | Fall 2024 | 09/09/2024 – 12/09/2024 | 3 Credit Modality:**

Online Hybrid (Sync/Async)

**Course Site URL** <https://brightspace.nyu.edu/d2l/home/374700>

### General Course Information

**Name/Title:** Dr. William Townsend, PMP

**NYU Email:** wbt3@nyu.edu

**Class Meeting Schedule:** 09/09/2024 – 12/09/2024 | 6:30 PM - 9:05 PM ET | Mondays

**Class Location:** Online Hybrid (Sync/Async)

**Office Hours:** As requested. Phone (904) 273-6769

### 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

This is an on-line course. As a result, effective communications are crucial for it to run smoothly. When things change or unexpected events occur, I will use Brightspace to communicate with you and keep you up to date. Credit students must use their NYU email to

communicate. It is important for you to check Brightspace frequently for announcements concerning assignments, exam dates, class changes or cancellations, and other important information. Important announcements are forwarded to your NYU email account. Please be sure that you check this email account frequently or have it forwarded to an email account that you do check regularly, so that it is an effective way to contact you. I will respond to your emails as soon as possible.

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-andgraduation/forms-policies-procedures/change-of-student-information/pronouns-and-namepronunciation.html>

### **Structure | Method | Modality**

This course is Online - Hybrid (Synch/Asynch). Brightspace is the learning management system we will use. Zoom is the online instruction platform used at NYU. Weekly lesson and Forums will be posted frequently throughout the course. Students should check the course site often during the week. Synchronous meetings are hosted through Zoom accessed through the course's web site. Students may use the website or any other means they wish for performing assignments.

### **Expectations**

#### Learning Environment

As graduate students, you are expected to conduct yourselves in a professional manner and engage and collaborate with your classmates.

SPS classrooms are diverse and include students who range in age, culture, learning styles, and levels of professional experience. To maintain an inclusive environment that ensures all students can equally participate with and learn from each other, as well as receive feedback and instruction from faculty during group discussions in the classroom, all course-based discussions and group projects should occur in a language that is shared among all participants.

#### Participation

Attendance is not graded in this course; however, class participation is. It is important to actively participate in the discussions during both synchronous and asynchronous session. All course assignments will be made in the Brightspace website. They can be found in the Lessons, Assignments and Tests tabs of the website.

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

### Assignments and Deadlines

Each synchronous session online, using Zoom, will be from 6:30-9:05PM. These sessions will be a mixture of lecture, discussion, exercises, activities and Q&A designed to present information technology management in a way that you can not only understand the concepts, but make them a part of the operational way that you think and manage. Synchronous session recordings will be available for your review.

For each asynchronous class, you will perform assignments and conduct online discussions focused on acquiring and practicing specific skills. More extensive, in-depth exercises and case studies will be used in these sessions.

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

All synchronous class sessions require use of Zoom and technology (e.g., laptop, computer lab, tablet or smart phone) for learning purposes. Asynchronous class interactions will require the use of the class Brightspace pages.

**Generative AI use for class assignments is prohibited.** You can only learn from the work you do. Unless otherwise stated, you should not use generative AI tools to create any part of an assignment in this course; every submission should be entirely your work (for example from an NYU course).

This course assumes that work submitted by students – all process work, drafts, brainstorming artifacts, final works – will be generated by the students themselves, working individually or in groups as directed by class assignment instructions. As will any other class work generated by anyone other than the students (by other students, by a company, or by using generative AI tools), use can be a violation of Academic Integrity policy

### Feedback and Viewing Grades

You can access your grades on the course site Gradebook.

### Attendance

NYUSPS Attendance Policy: Students are expected to attend all classes. 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. Students are responsible for assignments given during any absence. 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](#) for additional information about attendance.

## **Textbooks and Course Materials**

There are several readings required for this course. Most of these are provided in the Resources section of the Brightspace website or through links there. In addition, there are two required texts and one suggested text for the course.

### Required Texts

Baltzan, Paige; Business Driven Technology, 9th Edition, McGraw Hill, 2022, 9781260727814 (any format of the 9th edition is acceptable)

Davenport; Thomas; Iansiti, Marco and Serels, Alain: Managing with Analytics at Procter & Gamble, 2013, Harvard Business School Case Study, Available through Harvard Business School Publishing, Case 9-613-045

### Suggested Text

Gressel, Simone; Pauleen, David; Taskin, Nazim: Management Decision-Making, Big Data and Analytics, Sage Publishing, 2021: 9781526492005 (paperback version, any format is acceptable)

Textbook and coursepack are available from the NYU bookstore at: <http://shopnyu.com/>

## **Grading | Assessment**

### Assignment and Evaluations Breakdown

Participation in the synchronous classes and online asynchronous discussions is an important part of this course. While the readings will describe concepts and skills, it is only through the discussions that you will gain the practical context for their application in your environment. Participation in the discussion is also the most effective way for you to “test drive” these skills and see how they can work for you, in a safe classroom environment. Students are responsible for assignments given during any absence.

### Examinations

Two short tests will be conducted, in sessions 7 and 14. These tests will be during synchronous 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: *Managing with Analytics at Procter & Gamble, by Thomas Davenport; Marco Iansiti, and Alain Serels, 2013, Harvard Business School Case Study, Available through Harvard Business School Publishing, Case 9-613-045.*

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, on 4/29.

### GRADE FORMULATION:

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

Assignments will be evaluated for content, completeness, clarity and composition. Written assignments should be submitted in APA format.

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.

### IMPORTANT COURSE OUTLINE DATES:

Session	Date	Topic(s)	Baltzan Readings	Synch/Asynch	Assignments
1	9/9	Introduction	Chapter 1	Synch	Forum posting
2	9/16	Role of MIS & IT	Chapters 2 & 3	Asynch	Videos, Forum postings
3	9/23	Structuring Data	Chapters 6 & 7	Synch	Case study
4	9/30	IT Supported Decision making	Chapter 4, B4	Asynch	Supplemental readings, Videos
5	10/7	Data Analytics	Chapters 8 & 9, B	Synch	Forum postings, Case study, Supplemental reading, Videos
6	10/15	E-Commerce	Chapters 13 & 14	Asynch	Supplemental readings, videos
7	10/21	Test 1		Synch	
8	10/28	System Development	Chapters 17 & 18	Synch	Forum postings, Case study, Videos, Supplemental reading
9	11/4	System Development. Too	Chapters 10, 11 & 12	Asynch	Supplemental reading, Videos
10	11/11	IT Outside the Enterprise	Chapters 15 & 16	Synch	Case study, Supplemental reading
11	11/18	Information Security & Privacy	Chapter 5, B6, B7	Asynch	Case study, Supplemental reading

12	11/25	Emerging Trends	Chapter B10	Synch	Forum postings, Supplemental reading
13	12/2	Individual Projects		Asynch	Forum posting Individual project
14	12/9	Test 2		Synch	

*--All assignments and due dates subject to change--*

### **Course Outline**

**Start/End Dates:** 09/09/2024 -12/09/2024 | Mondays

**Time:** 6:30 PM - 9:05 PM

**No Class Date(s):** 10/14/2024 - Legislative Day

**Special Notes:** 10/14/24 class will be held on Tuesday 10/15/24

### **Session 1, 9/09 — 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, 9/16 — 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, 9/23 — 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, 9/30 — 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, 10/7 — Data Analytics**

- Define 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, 10/15 — E-Commerce**

- 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, 10/21 — Test 1**

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

### **Session 8, 10/28 — System Development**

- 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, 11/4 — System Development. Too**

- Identify software development methods.
- Describe three development methodologies.
- Compare and contrast Waterfall and Agile development methods.
- Describe Agile method and Scrum in detail.
- Perform case study.



**Session 10, 11/11 — 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, 11/18 — 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, 11/25 — 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, 12/2 — Individual Project**

- Individual project
- Course Summary

**Session 14, 12/9 — Test 2**

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

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**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](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](#). 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.