

Fall 2019

IT 101-003: Introduction to Information Technology

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IT 101 Introduction to Information Technology

Course Description: This course introduces the students to the fundamentals of various aspects of Information Technology (IT). It provides a working knowledge to IT terminology, processes that use IT, and the components found in telecommunications and computer systems that are used by IT professionals. The course material is discussed in context to IT careers. For example, operating systems are introduced from the viewpoint of what a system administrator would need to know to improve performance verses what a computer science engineer would need to know to develop a new software algorithm.

Topics include: Computer fundamentals, computer architecture, digital storage and data representation, networking, database management systems, system and application software, Internet and World Wide Web, computer security.

Pre-requisites: None.

Instructor: Lori Watrous-deVersterre

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Email: llw2@njit.edu **Please put IT101 and course section in the subject of your email.** This will ensure I respond more quickly to your email.

Office Hours: See canvas course information for standard open office hours, or by appointment

Text: *USING INFORMATION TECHNOLOGY, 11th edition*, Brian Williams & Stacey Sawyer, McGraw Hill, 2015, ISBN-978-0-07-351688-2. **Note this is the “Complete” version and contains 10 chapters.**

Canvas: Additional material and resources are found on the class website in Canvas, (<https://canvas.njit.edu/>). It is modified and updated as the course progresses and contains the most recent information.

Schedule: **The following is a tentative schedule and subject to change. Refer to class web page for most recent information.**

Day	Topics	Reading Due
Week1	Course Information Introduction to IT <ul style="list-style-type: none"> • IT in your life • Differences between CS, IS & IT • Types of computers • Personal technology • Intro to computer hardware 	None
9/5 & 9/9	Computer Hardware <ul style="list-style-type: none"> • Binary and Hex • ASCII and Unicode 	Read Chapter 1 Read Sections 4.1 – 4.2
Week 2	Computer Hardware <ul style="list-style-type: none"> • CPU, ALU and registers • Memory hierarchy • Cache memory • Secondary storage 	Read Section 4.3-4.8
9/12 & 9/16	Computer Hardware <ul style="list-style-type: none"> • Input devices • Output devices • Ports and network connections 	Read Chapter 5 Read Section 4.6
Week 3	Application Programs <ul style="list-style-type: none"> • Layered model • Open source software • Intro to NJIT computing services 	Read Sections 3.5 – 3.11
9/19 & 9/23	Programming Languages <ul style="list-style-type: none"> • History • Object-oriented programming • Various languages 	Read Sections 10.3 – 10.5

Week 4 9/26 & 9/30	Scripting <ul style="list-style-type: none"> • Introduction to AFS • Uses of scripting 	Read Section 10.6 Read about AFS permissions
	Operating Systems and Drivers <ul style="list-style-type: none"> • User interface • File system 	Read Sections 3.1 – 3.2
Week 5 10/3 & 10/7	Operating Systems <ul style="list-style-type: none"> • Booting • Drivers • Memory management • Task management 	Read Sections 3.3 – 3.4
	Networks <ul style="list-style-type: none"> • Connecting to the internet • Protocols • Layered model 	Read Sections 2.1-2.2
Week 6 10/10 & 10/14	Networked Computing <ul style="list-style-type: none"> • Layered model (continued) • IP addresses • URLs and ICANN 	Read Sections 6.3 – 6.4
	Distributed Systems <ul style="list-style-type: none"> • Multiprocessor vs distributed systems • Client-server • Web servers, file servers • Peer to peer • Cloud Computing 	Read Sections 6.1 – 6.2
Week 7 10/7 & 10/21	Cell phones & portable devices <ul style="list-style-type: none"> • GPS • Cell phones • Internet access 	Read Chapter 7
	Midterm October 21st	Study!
Week 8 10/24 & 10/28	World Wide Web <ul style="list-style-type: none"> • HTML • Multimedia • Web server considerations 	Read Sections 2.3 -2.4
	World Wide Web <ul style="list-style-type: none"> • Usability • Accessibility 	Read about www usability and accessibility
Week 9 10/31 & 11/4	Ethical Computing	Read Sections 9.1, 9.4 & 9.5, 6.6, 6.7
	Security and Privacy <ul style="list-style-type: none"> • Malware • Denial of service attacks • Antivirus, firewalls • Cookies, phishing, spyware • Identity theft 	Read Sections 2.6, 6.5 & 8.8
Week 10 11/7 & 11/11	Security and Privacy <ul style="list-style-type: none"> • Encryption • Security threats • Safeguards 	Read Sections 9.2 – 9.3
	Artificial Intelligence <ul style="list-style-type: none"> • Data mining • Expert Systems • Robotics • Turing Test 	Read Section 8.4, 8.7, 8.8

Week 11 11/14 & 11/18	Presentations 11/14	Paper & presentation due for ALL students on November 13th at 11:55pm in Moodle
	Presentations 11/18	
Week 12 11/21 & 11/25	Databases <ul style="list-style-type: none"> Records, tables and keys Relational database 	Read Sections 3.9, 8.1 – 8.3
	Database Lab <ul style="list-style-type: none"> Forms, queries and reports 	
Week 13 11/26 & 12/2	E-Commerce, M-Commerce, P-Commerce <ul style="list-style-type: none"> Client-Server-Database model Shopping carts 	Read Section 2.5, 8.5
	System Management	Read Section 10.1-10.2
Week 14 12/5 & 12/9	Information Systems <ul style="list-style-type: none"> IS Building Blocks Transaction processing systems 	Read Section 8.6
	Game Design	
December 14-20	Final Exam – time and place to be announced	Study!

Credit: 3

Grades: Final grades will be based on:

Midterm	25%	250 points
Final	30%	300 points
Class participation	5%	50 points
Homework (5 assignments)	25%	250 points
Project & Presentation	15%	150 points

There is a total of 1000 possible points for the term. Grades are based solely on the points you earn.

A	900 -1000 points
B+	850 – 899 points
B	800 – 849 points
C+	750 – 799 points
C	700 – 749 points
D	600 – 699 points
F	0 - 599 points

I may curve up when assigning grades, but I will under no circumstances curve down. For example, you may earn an A if you have 898 points, but you will not earn lower than a B+ if you have 850 points. I will not assign incompletes unless there are extraordinary circumstances.

POLICIES:

Assignments (Homework and Project)

Homework for this class consists of 5 homework assignments. They are usually due about one week after being issued. Their purpose is to help you keep up with the material and assess your readiness for the midterm and final.

Homework is due before midnight (**11:55pm**) on the day **before** the due date specified on the schedule. It is submitted via Canvas electronically. Late homework will not be accepted unless there is a reason beyond your control. In most cases I will grade homework online and return the results back to you electronically via Canvas with the grade posted in the comments section and additional comments included within the returned electronic document. I will also post the solutions online. Once solutions are posted, no homework, regardless of reason will be accepted.

A 6 page double spaced written report constitutes the project portion of your final grade. It will be of a topic of your choice based on the material mentioned in the textbook. Both the paper and any powerpoint/ display material will be submitted via Canvas no later than **11:55pm**. The purpose of this assignment is to give you practice in presenting technical information in a clear and simply explained manner that can be disseminated to

both technical and non-technical audiences. This is a crucial skill for an information technology professional to master in order to be effective in the business world. Further details on this project will be provided in class and on Canvas.

Participation

I expect you to actively participate in class by asking questions and to come prepared to answer questions in class. It is important to have read the Chapter in advance of class. You will get more out of the class if you've spent some time thinking about the material in advance.

I reserve the right to issue surprise quizzes at my discretion which will be included as part of the participation grade. This ensures you have done the readings and forces you to keep up with the material.

Makeup Tests and Assignments

Requests for makeup tests and assignment changes must be made in advance with the instructor and will only be approved if the reason is beyond your control.

Note: Calculators are not necessary and are not permitted for exams in this course.

Academic Integrity Policy

The NJIT academic honor code is located at: <http://integrity.njit.edu/index.html>. This honor code applies in its entirety to this class. Violations will not be tolerated. In addition, students should familiarize themselves with NJIT's "[Best Practices related to Academic Integrity](#)" which is developed and published on the Provost's website (on the policies page).

All of your assignments must constitute original work. These assignments may **NOT** be done in collaboration with anyone else (unless otherwise approved). No credit will be given for any assignment that is copied—in part or in its entirety—from another person. **Both people involved will receive no credit.**

Note, however, that you may "talk" about assignments with each other, but such discussions must remain at a conceptual level. In summary, keep in mind:

- Do NOT ask to see another person's assignment, particularly a finished assignment.
- Do NOT pass your assignment around to other members of the class.
- Do NOT submit duplicate assignments. Even partially duplicate assignments will NOT be accepted.
- If the instructor is at all **uncomfortable about the originality of your work**, no credit will be given.
- Do NOT submit an assignment used for previous assignments in this or other courses.

TURNITIN Policy

NJIT uses Turnitin.com, a service that helps prevent plagiarism on student papers. I will be using the Turnitin.com service at my discretion to determine the originality of student papers. If I submit your paper to Turnitin.com, it will be stored by Turnitin.com in their database as long as their service remains in existence. If you object to this storage of your paper, **you must let me know no later than two weeks after the start of this class.** If you object to the storage of your paper on Turnitin.com, I will utilize other services and techniques to check your work for plagiarism.