New York City College of Technology
Computer Systems Technology Department

CST1100 – Introduction to Computer Systems
             3 credits, 4 Hours (2 lecture hrs, 2 lab hrs)

Course Aims/Description:
The course is an overview of machine architecture, software development, software engineering, data organization, ethics, and computer security. The historical and evolutionary development of computers will be examined. The course will cover algorithms - the introduction of computer programming.

This is a designated writing intensive course which will include writing assignments and a final project. Writing assignments will relate to the material covered in the course outline.

There is a **required** library visit - students will be introduced to the many databases within CityTech's library and shown how to log on to the library system using their ID.

Final Project
The final project will be a team project with an oral presentation. The team will choose a subject matter from the textbook ranging from such topics as the history of computing, networking, artificial intelligence, security, and gaming. The final project will require the students to use the Microsoft Office applications – Word, Excel, Access and PowerPoint. Each team will present their final project using PowerPoint. The MLA format will be used to cite references.

Prerequisites:
CUNY certification in mathematics, reading and writing.
Or
If the course is taken as part of a Learning Community: CUNY certification in mathematics and reading and co-requisite ENG092W.

Objectives:
The course will present students with an overall inner inspection of the world of computing. It is a foundation course – a thread to the other courses within our Computer Systems Technology department. It will enhance their critical thinking skills needed for an increasingly more complex and technological world. It will facilitate the student becoming a "computer technologist". In addition, the students will learn to work productively within a team.

Learning Outcomes and Assessment Measures:
After successful completion of this course, the student will be able to:

Student Learning Objectives:	Assessment Measurement/Competencies: (lab assignments, quizzes and exams will be used for assessment)
Describe how characters and numbers are stored in bits/bytes in a computer system	Do problems converting numbers between bases – base 10, binary and hexadecimal. Knowledgeable of what is an ASCII character set. Answer such a question as "What binary value is equivalent to the hex number C43A?"
Describe the inner workings of a computer	A quiz that would ask such questions as "What circuit is used to address memory? What function does a decoder perform? What is meant by polling?"
Explain what is an operating system	Give examples of different operating systems. Understanding what is the difference between a graphical user interface and a command-line interface?
Describe file systems and directories	Working on lab assignments, students will understand the path of a file, the naming convention of files. Will be able to compare and contrast the difference between direct and sequential file access.

Develop critical thinking skills	Define a given problem using algorithms.
Describe the different types of computer networks.	List the different types of network topologies. How data is transmitted. Will be able to explain TCP/IP protocol.
Explain what is a Database Management System	Working on lab assignments, students will understand how to create a table using Access, set primary key and do simple SQL Select statements.
Use Microsoft applications, such as Word, to write papers on such topics as computer ethics. Give a PowerPoint presentation	Will explain the social and ethical issues in using today's technology.
Work effectively in a team.	The final project is a team project. The students will group into teams and choose a topic covered in the class for further research. Will use the Internet and other resources to complete the project. Also, there will be an oral presentation made to the class. It will include their learning experience in working in a group.

General Education Outcomes:
- SKILLS/Inquiry/Analysis: Student will employ logical reasoning.
- SKILLS/Communication: Students will communicate by written, oral, and visual venue.
- Values, Ethics, Relationships: Students will work within teams to build consensus, respect and foster creative thinking. Students will employ ethical responsibility in creating webpages.
- Information Literacies: Gather, interpret, evaluate, and apply information from a variety of resources.

Required Textbook:
Nell Dale, John Lewis, *Computer Science Illuminated Sixth Edition*. Jones and Bartlett Publishers Inc., ISBN-13: 9781284055917

All students are required to have a flash drive for storage.

Attendance:
Attendance is expected at every class meeting. College policy sets the maximum number of permissible absences at 10% of the number of class meetings scheduled for the semester. If the class is meeting two times per week, you are permitted to be absent a total of three class sessions; if the class meets only once per week, you are permitted to miss one and one-half of the class meetings.

Academic Integrity Policy:
Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and at New York City College of Technology and is punishable by penalties, including failing grades, suspension, and expulsion. The complete text of the College policy on Academic Integrity may be found in the catalog.

Grading Policy:

Letter	A	A-	B+	B	B-	C+	C	D	F

Grade									
Numeric Grade	93-100	90-92.9	87-89.9	83-86.9	80-82.9	77-79.9	70-76.9	60-69.9	59 and below

Course Grading Formula:

Test #1	10%
Test #2	15%
Midterm Exam	20%
Final Exam	25%
Written Lab Assignments	15%
Team Project	15%

Course Outline:

At the end of each chapter, there are essay questions. Your instructor will assign the essay or short answer questions.

Week	Topics	Chapter Readings
1	Laying the Groundwork - The Big Picture	Chapter 1
2	The Information Layer - Binary Values and Number Systems - Converting from different bases	Chapter 2
3	Data Representation	Chapter 3
4	The Hardware Layer	Chapter 4
5	Computing Components - The Fetch-Execute Cycle - Von Neumann Architecture - RAM and ROM	Chapter 5
6	The Programming Layer Low-Level Programming Languages - Introduction to Assembly Language	Chapter 6
7	**Midterm Exam** Problem-Solving and Algorithm Design - How to Solve Problems - Algorithms -Pseudocode	Chapter 7
8	Abstract Data Types and Subprograms	Chapter 8
9	Object- Oriented Design and High-Level Programming Languages	Chapter 9
10	The Operating Systems Layer - Roles of an Operating System - Memory Management	Chapter 10
11	File Systems and Directories - File Systems - Directories - Disk Scheduling	Chapter 11,

12	The Application Layer - Information Systems - Artificial Intelligence	Chapters 12,13
13	The Communications Layer Networks - Types of Networks - Packet Switching Computer Security	Chapter 15, 17
14	Final Exam	
15	**Final Project**	

Required Supplementary Writing Assignment

The Pros and Cons of Social Networking

Social networks will allow people to connect for a variety of reasons in a digital environment. Professionals might join LinkedIn to meet business contacts; or others, may use Facebook to contact old friends and meet new ones.

Social networking serves to bring people with common interests together, offering exposure to new ideas from people around the globe. In addition, for some individuals, it may be seem as a means to decrease social anxiety.

However, at what cost? There are problems associated with social networking such as identity theft, privacy issues, and cyber bulling to name a few.

The paper will require the student to take a position on social networking (pro or con) and defend his or her viewpoint. There are no right or wrong answers.

Research Paper Requirement

Three pages, 1.5 spacing, default margins, and Times New Roman.

Cite four articles - that is (2 positives and 2 negative views on social networking).

Use the MLA citation.