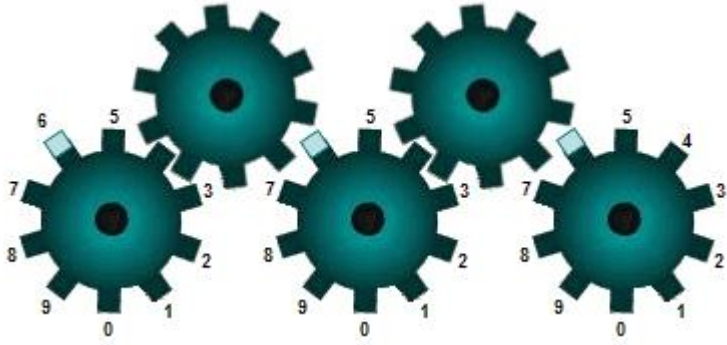


CSCI 120 - Introduction to Computers

with emphasis on general education



Section 7

Class

Mon, Thu, 2:45-4:00 pm

Teaching staff

Saad Mneimneh, **HN 1090F**

Office hours: **Wed 2-4 or by appointment**

[Syllabus](#) (evolving...)

Introduction

- what is a computer
- notion of computation
- computers and biology
- algorithms
- abstraction

History of computing

- early computing devices
- mechanical age
- electrical age, from vacuum tubes to diodes and transistors
- modern computers

Bits... and pieces

- digital vs. analog
- boolean operators
- gates and flip-flops
- main memory
- magnetic disks
- optical disks
- flash drives

Representations

- binary system
- numbers
- decimal and binary and an algorithm
- addition in binary
- negative numbers
- fractions
- text, ASCII, unicode

Inside a computer

- Main memory
- CPU, control unit, registers, ALU
- Bus
- I/O controllers
- Instruction set
- Cache memory
- Pipelining, machine cycle

Ports and Input/output devices

- serial ports, parallel ports
- SCSI, ATA, IDE, SATA

- USB, FireWire, Bluetooth
- Direct Memory Access DMA
- Input devices, keyboard, mouse
- Audio, camera, image formats, video
- Scanners, reading devices
- Output devices, displays, printers

Operating System

- Batch processing, interactive processing, time-sharing
- Application software and system software
- Components of OS
- Scheduling and dispatching and interrupts
- Resource allocation, semaphores

Programming constructs - conditions, loops, recursion

Golden number, Fibonacci, grammars

Networking / Internet / html

- Topology, LANs, WANs, bridges, routers
- Architecture: 7 layers
- Routing, circuit switching, store-and forward
- TCP/IP, IP addresses

Searching / data structures

Some algorithms (from real life): sorting - coloring - matching

Grades

- Homework 20%
- Test I 20%
- Test II 20%
- Final 30%
- Report 10%

Honor Code

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The college is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.