



Course Number and Title: CIS 130 Computer Organization

Campus Location:

Georgetown, Dover, Wilmington

Effective Date:

2018-51

Prerequisite:

CSC 114, SSC 100 or concurrent

Co-Requisites:

none

Course Credits and Hours:

3.00 credits

2.00 lecture hours/week

2.00 lab hours/week

Course Description:

The computer is introduced as a hierarchy of levels. Topics include digital logic, micro-programming, memory, input/output (I/O) computer arithmetic, instruction sets, central processing unit (CPU) structure, control unit operation, parallel organization, reduced instruction set computers (RISC), and assembly language.

Required Text(s):

Obtain current textbook information by viewing the [campus bookstore - https://www.dtcc.edu/bookstores](https://www.dtcc.edu/bookstores) online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:

None

Schedule Type:

Classroom Course

Disclaimer:

None

Core Course Performance Objectives (CCPOs):

1. Use different number systems. (CCC 6; PGC 4)
2. Develop assembly language programs. (CCC 6; PGC 4)
3. Use alphanumeric data. (CCC 6; PGC 4)
4. Identify basic system organization and functions such as processor, storage, and I/O units. (CCC 6; PGC 2)
5. Discuss memory organization. (CCC 6; PGC 2)
6. Apply memory addressing such as direct, memory indirect, register indirect, and indexed. (CCC 6; PGC 2)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):

Upon completion of this course, the student will:

1. Use different number systems.
 1. Apply and convert between different number systems, including signed and unsigned numbers.
 2. Perform arithmetic operations on different number systems.
2. Develop assembly language programs.
 1. Write and debug assembly language programs that use all basic control structures.
 2. Write and debug assembly language programs that use all simple data types.
 3. Write and debug assembly language programs that use 1-D array, 2-D array, and stack.
3. Use alphanumeric data.
 1. Write and debug assembly language programs that manipulate alphanumeric data.
 2. Describe and explain data representation in terms of CPU manipulation and I/O operations.
4. Identify basic system organization and functions such as processor, storage, and I/O units.
 1. Describe and explain the basic organization and functionality of Von Neumann machines.
 2. Describe and explain the basic organization and functionality of parallel computer systems.
 3. Describe and explain the functions of basic components of a computer system.
5. Discuss memory organization.
 1. Describe and explain different hierarchy of computer memory in terms of speed and cost.
 2. Describe and explain the functionality of cache and buffers.
 3. Describe and explain segmentation and paging.
6. Apply memory addressing such as direct, memory indirect, register indirect, and indexed.
 1. Write and debug assembly language programs that use register-to-register and register- to-memory operations.
 2. Write and debug assembly language programs that use direct, indirect, and indexed addressing.

Evaluation Criteria/Policies:

Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

92	-	100	=	A
83	-	91	=	B
75	-	82	=	C
0	-	74	=	F

Students should refer to the [Student Handbook - https://www.dtcc.edu/handbook](https://www.dtcc.edu/handbook) for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):

1. Install, configure, and secure computer applications and operating systems.
2. Design, write, and debug computer programs.
3. Design and integrate databases in computer programs
4. Analyze and design complex computer applications to solve business problems.
5. Integrate the principles of the Internet into web development.
6. Incorporate the principles of networking and information security in computer application development.

Disabilities Support Statement:

The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the [disabilities services - https://www.dtcc.edu/disabilitysupport](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.