



**Bachelor of Science Degree  
With major in  
Computer Science  
Department of Computer and Mathematical Sciences  
University of Houston-Downtown**

The Computer Science program in the Department of Computer and Mathematical Sciences at UH-Downtown offers students a strong foundation in the fundamental concepts of computer science combined with sound practical training relevant to the common applications of computing in business and industry. The Bachelor of Science degree provides preparation for all career paths in computer science and information technology, including database systems, scientific computing and simulation, graphics, artificial intelligence, software engineering, security and networking and telecommunications. By emphasizing broad-based studies including mathematics and science requirements, the student's choice of an approved university minor, and sustained development of writing and speaking proficiency, the degree furnishes students with the problem solving and communication skills that are in high demand in today's job market and graduate schools. Possessing many areas of expertise, the computer science faculty shares UH-D's commitment to quality teaching in a challenging yet personal and supportive learning environment. This commitment helps our majors compete successfully for positions involving the use and support of current computer applications, as well as for positions designing and building the computer applications of tomorrow.

The degree requires a minimum of 120 semester credit hours as indicated below. No grade of "D" in any course in the Department of Computer and Mathematical Sciences may be applied toward satisfying the requirements of any degree in the department. Any course substitution must be approved by the department chair and dean. The format of the degree is given below in six sections: General Education Requirements, Computer Science Requirements, Mathematics Requirements, and Free-Electives.

**DEGREE REQUIREMENTS**

**A. General Education Requirements (41 hours)**

**i. Common Core Requirements (38 hours)**

ENG 1301 and 1302 – Composition I, II

ENG 23XX – Any literature course

COMM (Approved 3 hours<sup>\*\*\*</sup>)

Fine Arts (Approved 3 hours selected from ART, DRA, MUS or other fine arts discipline)

HIST (Approved 6 hours<sup>†††</sup>)

POLS 2303 and 2304 – U.S. Government I, II

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<sup>\*\*\*</sup> Selected from COMM 1301,1303,1304,1305,3302,3304,3306 or other approved course.

<sup>†††</sup> Selected from HIST 1305, 1306, 2303, 2309 or other approved course.

Fall 2010

Lab Sciences (BIOL 1301-1101/1302-1102, CHEM 1307-1107/1308-1108, PHYS 1307-1107/1308-1108, or other approved 8 hours in the same natural science area)

Social/Behavioral Sciences (Approved 3 hours in ANTH, CJ, ECO, GEOG, PSY, SOC or other human behavior discipline)

Mathematics (MATH 2405 is used here)

Computer Literacy (CS 1410 is used here)

**ii. Writing Skills Requirement (3 hours)**

ENG 3302 – Business and Technical Report Writing

**B. Computer Sciences Requirements (52 hours)**

CS 1410 - CS I: Introduction to Computer Science with C++

CS 2410 - CS II: Introduction to Data Structures and Algorithms

CS 2401 - Introduction to Computer Organization and Assembly Language

CS 2402 - Digital Logic

CS 3304 - Data and Information Structures

CS 3306 - Theory of Computation

CS 3420 – Introduction to Software Engineering

CS 4294 - Senior Seminar <sup>+++</sup>(must be taken before either 4395 or W-course)

CS 4303 - Programming Language Concepts

CS 4315 - Operating Systems

CS 4318 – Introduction to Database Systems

CS 4395 or an approved W-course<sup>§§§</sup>

Plus 12 additional hours of computer science electives, at least 9 of which must be 3000 or 4000-level.

**C. Mathematics Requirements (19 hours)**

MATH 2401 – Calculus I

MATH 2402 - Calculus II

MATH 2405 - Discrete Mathematics

MATH 2407 - Linear Algebra

MATH 3302 - Probability and Statistics

**D. Free Electives (enough hours to complete a minimum of 120 hours total)**

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<sup>+++</sup> Based on their performance in CS 4294 and a GPA of at least 3.0, students are required to participate in CS 4395 or take an approved writing course in the major.

<sup>§§§</sup> The approved writing courses are CS 4325, CS 4328, and CS 4306.