



#### \*COURSE LISTINGS

The offerings of the Comparative Literature Program are determined by the needs of students in the program and the faculty available. For specific information, consult the coordinator.

**COMPL 301 Seminar: Approaches to Comparative Literature** 3 hrs, 3 cr. Study of selected major works to demonstrate scope and various approaches of comparative literature. Focus on conscious imitation, treatment of similar themes, use of well-defined genres and conventions as well as of concepts from history of ideas. Emphasis on close reading of texts and development of critical vocabulary. Required of all majors in comparative literature.

**COMPL 320, 321 Comparative Studies in Prose Fiction** 3 hrs, 3 cr each. May be taken more than once when content varies.

**COMPL 330, 331 Comparative Studies in Drama** 3 hrs, 3 cr each. May be taken more than once when content varies.

**COMPL 340, 341 Perspectives on Literature and the Arts** 3 hrs, 3 cr each. May be taken more than once when content varies.

**COMPL 350, 351 Comparative Studies in Literary Movements** 3 hrs, 3 cr each. May be taken more than once when content varies.

**COMPL 370, 371 Comparative Studies in Myth and Folklore** 3 hrs, 3 cr each. May be taken more than once when content varies.

**COMPL 380, 381 Selected Topics in Comparative Literature** 3 hrs, 3 cr each. May be taken more than once when content varies.

**COMPL 390, 391 Honors Project** 3 hrs, 3 cr each. Prereq: completion of 9 cr in COMPL-prefixed courses.

\*ENGL 220 is a prerequisite for all comparative literature courses.

## Computer Science

**Department Office** 1008 North Building; 772-5213

**Chair** Virginia Teller

**Professors** Cohen, Epstein, Negoita, Teller, Zamfirescu

**Associate Professors** Schaffer, Weiss

**Assistant Professors** Sakas, Shankar, Stamos

**Lecturer** Schweitzer

**Advisors** See schedule outside HN1008

**Web Site:** <http://www.hunter.cuny.edu/cs>

The Department of Computer Science provides students with outstanding preparation both for immediate employment as computer professionals and for graduate study. Students use a broad spectrum of programming languages and machine architectures and are expected to construct creative solutions to challenging problems in a variety of contexts. In addition, students are educated in the mathematics of computer science—the theoretical foundations that support current technology and will guide its future development.

Students work with faculty who engage in research, publish books and articles in highly respected journals, and receive grants to pursue significant research. Adjunct faculty are highly competent professionals in a variety of specialized technical fields. The department takes an active interest in students' goals and provides extensive advising and guidance.

**General Education Requirement (GER)** CSCI 120 may be used to fulfill Broad Exposure/Stage 2, Group E.

**Distribution Requirement** See Appendix A for the Distribution Requirement, which may be binding on students who matriculated prior to fall 2001.

**Major** (42 cr in CSCI and a collateral 14 cr in MATH)

**Preliminary Courses** Before being permitted to enter computer science as a major, a student must complete the following sequence of courses, which introduces the student to the mathematical and programming concepts necessary to the foundations of computer science, with a B average or better (no mark less than C; only one C for this sequence will be accepted):

CSCI 135 Software Analysis & Design I  
CSCI 145 Computer Architecture II  
CSCI 150 Discrete Structures  
MATH 150 Calculus I  
MATH 155 Calculus II

**Required Courses** All computer science majors must complete successfully the following courses with a grade of C or better:

CSCI 235 Software Analysis & Design II  
CSCI 245 Computer Architecture II  
CSCI 265 Computer Theory I  
CSCI 335 Software Analysis & Design III  
CSCI 340 Operating Systems  
CSCI 345 Computer Architecture III  
MATH 160 Matrix Algebra  
STAT 213 Applied Statistics

**Electives** In addition to the preliminary and required courses, each major must complete 15 hours of elective credits from 300-level and 400-level courses with a grade of C or better. At least 12 elective credits must be in classes other than CSCI 391, 392 and 393. With departmental permission, certain appropriate upper-level electives from other academic departments may be substituted.

**Minor** A computer science minor consists of at least 12 credits (4 courses) in this department. The courses you take for the minor are up to you, provided your selections fall within the following guidelines:

CSCI 120 may not be used toward the computer science minor.

CSCI 135 must be part of the minor.

You may not take any CSCI course until you have completed all the prerequisites for that course, or obtain a written waiver from the instructor.

You should confer with an advisor in your major to see if that department has a preference about which CSCI courses you should take.

**Listed below are two suggested sequences for the computer science minor:**

CSCI 135, 235, 335 and 435 (programming track)

CSCI 135, 145, 245 and 345 (architecture track)

*Please note:* Computer science majors cannot do a computer science minor.

**Honors Work** To graduate from Hunter College with honors in computer science, a student must have at least a 2.7 GPA overall and a 3.5 GPA or better in computer science/math, and must receive a grade of A in one of the CSCI 493 series of courses.

**Recommended Course Sequence for Students without Credit for Pre-Calculus:**

**Term 1** MATH 125  
**Term 2** CSCI 135; CSCI 150; MATH 150  
**Term 3** CSCI 145; CSCI 235; MATH 155  
**Term 4** CSCI 245; CSCI 335; STAT 213  
**Term 5** CSCI 265; CSCI 340; MATH 160  
**Term 6** CSCI 345; two CSCI electives  
**Term 7** Three CSCI electives

**Recommended Course Sequence for Students with Credit for Pre-Calculus:**

**Term 1** CSCI 135; CSCI 150; MATH 150  
**Term 2** CSCI 145; CSCI 235; MATH 155; STAT 213  
**Term 3** CSCI 245; CSCI 335; CSCI 340; MATH 160  
**Term 4** CSCI 265; CSCI 345; CSCI electives (1 or 2)  
**Term 5** CSCI electives (3 or 4)

The "one repeat" rule is in effect for all courses to be used toward the major, from CSCI 135 through the 400-level courses. This means that if a student fails a CSCI major course once (failure = D, F, NC, WU), that student will have only one more chance to pass the course. Failing a prerequisite course twice will prevent a student from declaring the major; failing a core (required) course twice will prevent the student from graduating as a computer science major. Finally, failing two courses—one time each—in the CSCI major sequence will have the same consequences.

In addition, the Computer Science Department will not accept a CR grade in any of the preliminary or required courses for the major (CSCI 135, 145, 150, 235, 245, 265, 335, 340, 345). Any student who wishes to declare computer science as a major but who has received a grade of CR in any of the CSCI courses listed above must ask the instructor of that course to change the CR grade to the appropriate letter grade; this must be done before the Declaration of Major form can be authorized.

*Please Note:* A grade of D is *not* considered a passing grade by this department in any computer science or math courses required for the computer science major.

## COURSE LISTINGS

**CSCI 115 Computer Technology in Childhood Education** 3 hrs (1 lec, 2 lab), 2 cr. Pre- or coreq: QSTA 400. *Open only to Education majors.* Students learn to use a number of software tools and applications that can be infused into the curriculum of the elementary school. Includes a focus on software packages for designing lessons, presentation applications in the classroom, information retrieval, and a two-hour workshop on assistive technology for students with various disabilities.

**CSCI 120 Introduction to Computers** 3 hrs, 3 cr; GER/2/E. *Intended for non-majors.* An introduction to the principles of computer science. Discussion of the organization of computer systems and their applications; software packages.

**CSCI 135 Software Analysis and Design I** 3 hrs, 3 cr. Prereq: *One of the following—MATH 121, 125, 150, or 155.* This first course for prospective computer science majors and minors concentrates on problem-solving techniques using a high-level programming language. The course includes a brief overview of computer systems.

**CSCI 145 Computer Architecture I** 3 hrs, 3 cr. Prereq: CSCI 135. Organization of computer systems and design of system elements, including ALU, memories, and interfaces. Some assembly language programming.

**CSCI 150 Discrete Structures** 3 hrs, 3 cr. Prereq: *One of the following—MATH 120, 121, 125, 150, or 155.* Mathematical background required for computer science. Sets, relations, cardinality, propositional calculus, discrete functions, truth tables, induction, combinatorics.

**CSCI 181, 182, 183 Independent Workshop** 1 hr, 1 cr; 2 hrs, 2 cr; 3 hrs, 3 cr. Prereq: *Declared computer science major with 18 credits completed in the department.* Outside internship in practical aspects of computing, e.g., systems programming, biomedical computing, computer-aided instruction. Credits may not be used toward the major.

**CSCI 235 Software Analysis and Design II** 3 hrs, 3 cr. Prereq: CSCI 135, CSCI 150, MATH 150. Representation of information in computers, including process and data abstraction techniques. The course covers static and dynamic storage methods, lists, stacks, queues, binary trees, recursion, analysis of simple algorithms, and some searching and sorting algorithms.

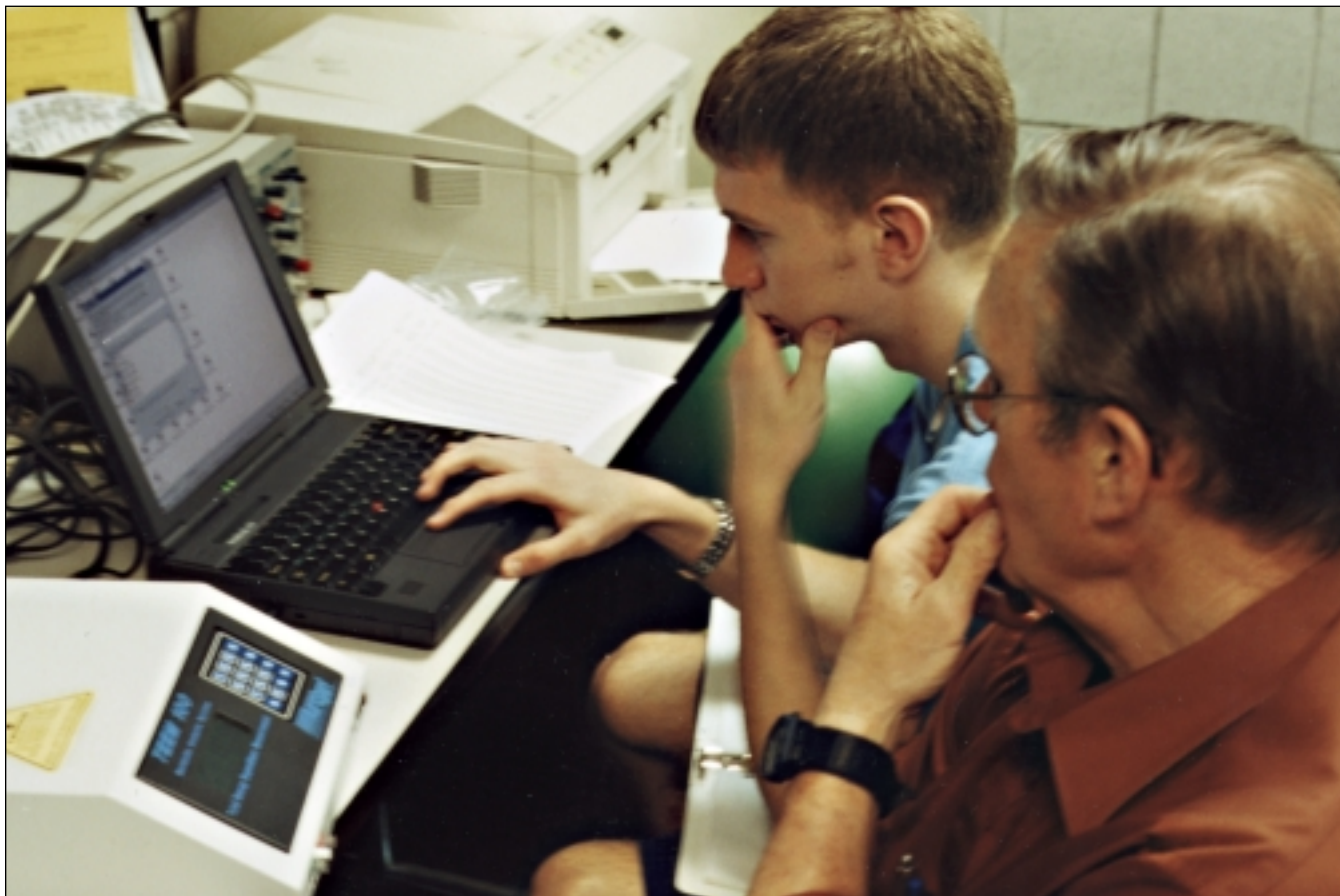
**CSCI 245 Computer Architecture II** 3 hrs, 3 cr. Prereq: CSCI 145, 150, and MATH 150. Boolean algebra, data representation, combinational circuits and minimization, sequential circuits.

**CSCI 265 Computer Theory I** 3 hrs, 3 cr. Prereq: CSCI 245 and MATH 150. Recursion, regular sets, regular expressions, finite automata, context-free grammars, pushdown automata.

**CSCI 335 Software Analysis and Design III** 3 hrs, 3 cr. Prereq: CSCI 235 and MATH 155. The design and analysis of various types of algorithms, including searching, sorting, graph and tree algorithms. Problem-solving techniques. Worst and average case behavior analysis, and optimality. Polynomial time complexity classes and theory, including NP-completeness.

**CSCI 340 Operating Systems** 3 hrs, 3 cr. Prereq: CSCI 145, 235, MATH 155 and STAT 113 or 213. Definition of functions and components of operating systems. Survey of contemporary multiprocessing/multiprogramming systems. Exploration of systems programs: their design, internal structure, and implementation.

**CSCI 345 Computer Architecture III** 3 hrs, 3 cr. Prereq: CSCI 245 and MATH 155. High performance computer architectures, including massively parallel SIMD and MIMD machines and distributed architectures.



**CSCI 350 Artificial Intelligence** 3 hrs, 3 cr. Prereq: CSCI 235. A survey of artificial intelligence including search and control, knowledge representation, logic and theorem proving, learning, natural language, and AI programming.

**CSCI 355 Introduction to Linear Programming** 3 hrs, 3 cr. Prereq: CSCI 235, and MATH 160. Introduction to operations research and game theory. Simplex method; inconsistency, redundancy, and degeneracy problems; two-phase method; duality; transportation problems.

**CSCI 365 Computer Theory II** 3 hrs, 3 cr. Prereq: CSCI 265. Turing machines, Post machines, Post's theorem, Minsky's theorem. Determinism and non-determinism. Undecidability, the halting problem. Recursive function theory.

**CSCI 385 Numerical Methods I** Prereq: CSCI 135 and MATH 160. Accuracy and precision, convergence, iterative and direct methods. Topics selected from: solution of polynomial equations and linear systems of equations, curve fitting and function approximation, interpolation, differentiation and integration, differential equations. This course is cross-listed as MATH 385 and as PHYS 385.

**CSCI 391, 392, 393 Independent Study in Computer Science** 1 hr, 1 cr; 2 hrs, 2 cr; 3 hrs, 3 cr. Prereq: declared computer science major, with perm instr and dept. Independent work, under the direction of a faculty member, in practical aspects of computing. \*These courses are repeatable. However, no more than a total of three (3) Independent Study credits may be counted toward the computer science major.

**CSCI 395 Topics in Computer Science** 3 hrs, 3 cr. Prereq: CSCI 135. Additional prerequisites vary with specific topics and are announced prior to registration. Topics include networking, data communications, statistical packages, and others.

**CSCI 405 Software Engineering** 3 hrs, 3 cr. Prereq: CSCI 335. Problems in large-scale software development including functional analysis of information processing systems, system design concepts, timing estimates, documentation, and system testing.

**CSCI 415 Telecomputing** 3 hrs, 3 cr. Prereq: CSCI 335, 340. Electronic and optical media for data transmission; organization and protocols for local area networks and wide area networks.

**CSCI 435 Data Base Management** 3 hrs, 3 cr. Prereq: CSCI 335. Hierarchical and network databases; theory of relational databases; normalization theory; query languages.

**CSCI 450 Language Translation** 3 hrs, 3 cr. Prereq: CSCI 335, 265. The theory and application of language recognition and analysis techniques, as they pertain to both formal programming languages and to natural languages. Includes lexical, syntactic, and semantic analysis methods, as well as discussions of efficient data representation.

**CSCI 460 Advanced Programming Languages** 3 hrs, 3 cr. Prereq: CSCI I 265, 335. Survey of computational models defined by and underlying modern programming languages, with emphasis on concurrency and parallelism. Includes languages for distributed and centralized parallel computation.

**CSCI 485 Numerical Methods II** 3 hrs, 3 cr. Prereq: CSCI 385. Advanced topics selected from: solution of equations and systems of equations, curve fitting and function approximation, interpolation, differentiation and integration, differential equations. Major project will be assigned. This course is cross-listed as MATH 485 and as PHYS 485.

**CSCI 493 Seminar** 3 hrs, 3 cr. Prereq: CSCI 235. Additional prereqs vary with specific topics and are announced prior to registration. Topics include micro-programming, information retrieval, artificial intelligence, data communications, and other areas.