HAMPTON UNIVERSITY
HAMPTON, VIRGINIA 23668

THE GRADUATE COLLEGE
(757) 727-5454

Computer Science

Hampton University offers the Master of Science (M.S.) program in Computer Science that is suitable for computer science majors, as well as those who have a strong interdisciplinary background. Following the Hampton tradition, the Computer Science department has created a friendly environment, with low student/faculty ration and a curriculum that can be adapted to individual needs. Experimental research programs, strong faculty commitment to teach and research, and excellent computing facilities, yield to a fertile environment in which to get an advanced degree. For those without a strong background in computer science, a set of bridge courses provide the necessary background for regular admission to the MS program. Graduates of the program have been actively recruited and hired by major software and hardware companies for positions in software development, testing and marketing.

Program Highlights

The department has numerous computing facilities available to all graduate students. Students have access to major programming languages (Java, C, C++, Lisp, Pascal, Ada, Scheme, Basic, FP), databases (Access, ORACLE, SQL Server) and packages (MS office, OPENGL, SPSS, IMSL, Mathematica) via our local network area of SUN, and Pentium-based PC machines. The network also provides access to the Internet and World Wide Web, which is taught and employed in many graduate courses. The network runs PVM for parallel simulations.

The M.S. degree program in Computer Science allows each student to obtain a broad background in areas of Programming Languages, Operating Systems, Theory, Software Engineering an Artificial Intelligence. Six required core courses are taught in these areas. Six elective courses are taken to broaden and deepen the experience, followed by a comprehensive examination. For the students interested in conducting a research project, a thesis may be substituted for one course and the thesis defense for the comprehensive examination.

Research projects are readily available since faculty is actively involved in research. Major areas of specialization include:

- Artificial Intelligence: Natural language processing, heuristic search, intelligent user interface, expert systems, neural networks, approximate reasoning, and parallelization of AI programs.
- Software Engineering: Theory and practice of program analysis and testing, specification and design of software tools, and advanced implementation methods for abstract data types.
- Parallel Processing: Parallel program development and application areas. Java program development techniques, object-oriented parallel programs, parallel search, parallel parsers and compilers, and parallel operating system design. Implementation and performance issues are of special interest.
- Computer Graphics: Curve and surface interpolation and approximation and OPENGL. Splines are used to generate curves and surfaces that preserve the shape of the data. A wide variety of applications are considered.
- Database: MS Access, ORALLE and SQL Server.

Financial Assistance

In addition to other University support, the Department of Computer Science has funding support from the National Science Foundation and NASA to provide tuition and stipends to qualified applicants. Graduate Assistant support labs and help administer the computer networks.

Bridge Program in Computer Science (Non-degree Program)

The Bridge Program in Computer Science prepares students for graduate work in the Master of Science program. The main goal of this program is to provide students from other disciplines with the necessary background to pursue a Master's degree in Computer Science. A secondary goal is to provide formal training for people in various technical disciplines who need significant background in computing. The Bridge Program consists of comprehensive courses at the 500-level that provide the equivalent of the core undergraduate computer science curriculum. This core set of courses is listed in the curriculum for the Computing Sciences Accreditation Board (CSAB) which sets the standards for undergraduate curricula. The following minimum requirements must be met before a student can be admitted to the program:

1. A bachelor's degree of higher
2. Two semesters of calculus and one semester of discrete mathematics
3. Formal training or experience in programming to the level of Computer Science 501

Degree Plan of Study: Computer Science

Required Courses: 21 credits			**Cr.**
CSC	510	Mathematical Foundations	3
CSC	620	Operating Systems	3
CSC	630	Artificial Intelligence	3
CSC	640	Software Engineering Foundations	3
CSC	650	Theory of Computation	3
CSC	660	Programming Languages	3
CSC	681/682	Research Seminar/ Teaching Seminar	3

Degree Plan Courses: 15 or 16 credits		
Plan A	Approved Elective	11
	CSC 684/689: Thesis Research/ Thesis	4
Plan B	Approved Elective	15
	CSC 702: Comprehensive Examination	1

Requirements for Bridge Program in Computer Science (if applicable): 12 credits			
CSC	501	Programming	3
CSC	506	Advanced Programming and Data Structures	3
CSC	507	Architecture and Operating Systems	3
CSC	508	Programming Languages	3

Total Credits: 36-37

This profile sheet should be used in concurrence with your academic catalog and the guidance of your academic advisor.