COMPUTER SCIENCE
Clarkson University

Information for Prospective Students

April 2017
Highlights

Job Market  The computer science job market is excellent. For example, employment as a software developer/engineer, the most common occupation for CS graduates, is projected to grow 17% over the 2014-24 ten-year period. This compares to 6.5% for all occupations. In 2015, the median pay for software developers/engineers was $101,000.¹

Personal Attention  With approximately 150 students and seven faculty members, we are a relatively small computer science department. In 2016-17, the average size of the required CS courses was 43. In elective CS courses, this drops to 27.

Faculty

Natasha Banerjee    Ph.D., Carnegie-Mellon University

Sean Banerjee    Ph.D., West Virginia University (starting Fall 2017)

Yaoqing Liu    Ph.D., University of Memphis

Christopher Lynch    Ph.D., Boston University

Alexis Maciel    Ph.D., McGill University

Jeanna Matthews    Ph.D., UC Berkeley

Christino Tamon    Ph.D., University of Calgary
Curriculum

The following is an overview of the requirements of the Computer Science major. Details can found in the Computer Science Student Handbook, which is available on the CS web site at clarkson.edu/cs/undergrad.

Required CS Courses  Nine courses covering the following topics:

Programming fundamentals · Computer organization · Algorithms and data structures · Large-scale software development · Programming languages · Theory of computation · Operating systems

CS Electives  A minimum of five courses. Undergraduate courses are currently available on the following topics:

Algorithms · Artificial intelligence · Compiler construction · Computational complexity · Computational learning · Computer graphics · Computer networks · Cryptography · Database systems · Human-computer interaction · Program verification · Security

In addition, with a GPA of at least 3.5 and permission of the instructor, undergraduates can take our advanced, research-focused graduate courses. Courses have recently been taught on the following topics:

Algorithms · Artificial intelligence · Computer networks · Computer vision · Cryptography · Machine learning · Natural Language Processing · Operating Systems · Security

Mathematics  Five courses in calculus, discrete mathematics and mathematical proofs, linear algebra, and statistics.
Science  Three courses in biology, chemistry or physics.

General Education  Clarkson’s general education curriculum, known as the Common Experience, includes the following requirements:

  Five courses covering at least four of the following knowledge areas:
  
  Contemporary and Global Issues · Cultures and Society · Economics and Organizations · Imaginative Arts · Individual and Group Behavior · Science, Technology and Society

  One or two communication-intensive courses

  A project-based professional experience (typically an internship, co-op or research experience)
Sample Schedule

First Year
CS141 Introduction to CS I  
MA131 Calculus I  
Science  
UNIV190  
FY100  
CS142 Introduction to CS II  
MA132 Calculus II  
Science  
Knowledge Area course  
Free elective

Sophomore Year
CS242 Adv. Programming Concepts  
MA211 Foundations  
Science  
Knowledge Area course  
Free elective  
CS241 Computer Organization  
CS344 Algorithms/Data Structures  
Math  
Knowledge Area course  
Free elective

Junior Year
CS341 Programming Languages  
CS345 Automata Theory  
CS350 Software Design and Dev.  
Knowledge Area course  
Free elective  
CS444 Operating Systems  
CS elective  
Math  
Knowledge Area course  
Free elective

Senior Year
CS elective  
CS elective  
Free elective  
Free elective  
Free elective
After Graduation

Here’s a sample of what some of our graduates are up to.

Software Developer/Engineer, Web Developer, Systems Engineer or Associate Engineer at:

- Apprenda
- Assured Information Security (AIS)
- BAE Systems
- C Speed
- General Dynamics Advanced Information Systems
- Google
- IBM
- Lockheed Martin
- MyWebGrocer
- Northrop Grumman
- Raytheon Technical Services
- Syracuse Research Corporation (SRC)
- Transcat
- Veterinary Information Network

Consultant, IBM

Network Technician, SpiceCSM

Research Scientist, Research Associates for Defense Conversion

Master’s program in Computer Science at:

- Clarkson University
- Purdue University
- Syracuse University

Master’s program in Telecommunication and Network Management, Syracuse University

Ph.D. program in Computer Science at:

- Clarkson University
- Rensselaer Polytechnic Institute
- Rice University
- Rochester Institute of Technology (CIS)
- University of Pittsburgh
- University of Rochester
Potential Employers

The following employers came to a recent career fair looking to hire Computer Science students:

Aflac New York · Air Force Research Laboratory - Rome Lab · Alcoa, Inc. · Anaren · Assured Information Security · Ayco · BAE Systems · Baldor · Bergmann Associates · Black River Systems Co., Inc. · Blinds To Go · BNY Mellon · Booz Allen Hamilton · BorgWarner · C Speed LLC · C Squared Systems LLC · CACI Technologies, Inc. · Canton Potsdam Hospital · Cives Steel Company · Consolidated Electrical Distributors, Inc. (CED) · Corning Incorporated · Coupa Software · Curbell · Dealer.com · Epic · Frazer Computing, Inc. · General Dynamics Electric Boat · General Dynamics Mission Systems · General Electric · GHD · Haefely Hipotronics · Harris Corporation · Iberdrola USA · IBM · Intel · James McGuinness & Associates · Kodak Alaris · Legrand · Lockheed Martin · Massachusetts Department of Transportation · Moog, Inc. · Mylan Technologies · Naval Nuclear Lab · Naval Undersea Warfare Center · New York Air Brake · New York Independent System Operator (NYISO) · Norfolk Naval Shipyard · Orange & Rockland · PAR Technology · Peace Corps · Portsmouth Naval Shipyard · Rapid Response Monitoring · Raymond Corporation (The) · Siege Technologies · SRC, Inc. · Tableau Software · Target · Technical Machine Services · The Stebbins Engineering & Manufacturing Company · Thomson Reuters · Turner Construction · UTC Aerospace Systems, Sensors & Integrated Systems · Walgreen Co. · Xerox