SCIENTIFIC COMPUTING (M.S.)
cs.camden.rutgers.edu/graduate

The master’s degree in scientific computing is designed to prepare students with rigorous computational training for careers in science, engineering, and finance. The program provides a strong foundation in algorithms and programming relevant to current and emerging computational applications. The program is offered by the Department of Computer Science at Rutgers–Camden and draws on courses from other departments and centers, including the Rutgers Center for Computational and Integrative Biology (CCIB), reflecting the interdisciplinary emphasis of the program and the interdisciplinary trends driving modern computer science.

Through rigorous coursework and a thesis, students will develop theoretical understanding and practical skills to tackle diverse computational problems in industry and academia, from modeling proteins for drug discovery to mining massive internet transaction datasets for business decision support to forecasting ecosystem behavior for sustainable management.

Graduates will be prepared for career opportunities where scientific computing plays an important enabling role, for example, in biotechnology, telecommunications, finance, and scientific research. The program will also provide graduates with a strong foundation in theory and algorithms suitable for Ph.D. programs in science and engineering at leading academic institutions.

ADMISSIONS REQUIREMENTS
• Online application (gradstudy.rutgers.edu/apply/overview)
• Official transcripts showing a bachelor’s degree with a minimum GPA of 3.0 and a firm foundation in linear algebra and multivariable calculus. A bachelor’s degree in a basic science or engineering field is preferred but not required.
• GRE scores
• Three letters of recommendation
• Personal statement (maximum two pages) about academic interests and career goals
• For applicants whose native language is not English, official TOEFL score report

FUNDING OPPORTUNITIES
The Graduate School offers competitive funding opportunities in the form of fellowships, scholarships, and tuition remission awards. These awards are determined by the graduate department’s admissions committee and do not require an additional application.

DEGREE REQUIREMENTS
The M.S. in scientific computing requires 30 credits, including six thesis credits. Coursework consists of a common core of four required courses that relate to all scientific computing applications and four elective courses. For students whose background is not in computer science, two background courses are available. These courses are not required for students who have taken equivalent courses in their bachelor’s degrees. Background course credits do not count toward the 30 required credits.

Core courses (four courses, 12 credits)
Elective courses (four courses, 12 credits)
Thesis (six credits)
Students will conduct a project and write a master’s thesis under the supervision of a faculty advisor. Thesis work will be carried out over two consecutive semesters (three credits per semester). At the end of the second semester, the thesis project will be assessed by a committee of graduate faculty members.

FACULTY AND RESEARCH AREA

- Jean-Camille Birget (Ph.D., University of California, Berkeley) **professor** | cryptography and computer security, automata theory, algorithmic problems in algebra
- Rajiv Gandhi (Ph.D., University of Maryland at College Park) **associate professor** | approximation algorithms, randomized algorithms, computational geometry, sensor networks
- Dawei Hong (Ph.D, University of Nebraska, Lincoln) **associate professor; department chair** | mathematical modeling of biological networks via stochastic differential equations, probabilistic methods in combinatorial optimization and signal processing
- Guy Kortsarz (Ph.D., Weizmann Institute) **professor** | approximation algorithms, randomized algorithms, combinatorial optimization, lower bounds on approximation
- Desmond Lun (Ph.D., Massachusetts Institute of Technology) **associate professor** | synthetic biology, systems biology, biological signal processing, network science
- Michael Palis (Ph.D., University of Minnesota) **professor** | high-performance computing, parallel programming environments, resource management and scheduling, optical networks and wireless communications, parallel and distributed algorithms
- Suneeta Ramaswami (Ph.D., University of Pennsylvania) **associate professor** | computational geometry and applications, mesh generation, self-organizing modular robots, algorithms
- Sunil Shende (Ph.D., University of Pennsylvania) **associate professor** | algorithms and combinatorial optimization, computational biology

Website: [cs.camden.rutgers.edu/graduate](cs.camden.rutgers.edu/graduate)

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