COMPUTER SCIENCE

Computer Science is the area of study that encompasses all of the theory and practice of computing. The mission of the Department of Computer Science at New Mexico State University is to provide formal education in the core disciplines of computer science, as well as to prepare our graduates for research, development and academic careers. For more information on the Department of Computer Science, please visit the web site https://computerscience.nmsu.edu.

Undergraduate Program Information

The undergraduate computer science programs prepare students for graduate study in computer science and for employment in positions involving the design, construction and application of computer systems. Undergraduate degree programs include a Bachelor of Science (**ABET accredited**), Bachelor of Arts, Bachelor of Science in Cybersecurity, four minor degree tracks, and seven concentrations. The B.S. degree is the traditional computer science degree program, while the B.A. degree offers a more open, flexible degree plan that is easier to combine with studies in other disciplines. The minors are for non-Computer Science majors and offer specialized tracks in algorithm theory, bioinformatics, computer systems and software development. The concentrations are for Computer Science majors and provide a focus on specialized areas such as algorithm theory, artificial intelligence, big data and data science, networking, cybersecurity, human computer interaction, and software development. With technology underpinning almost every area of human endeavor today, students across NMSU should consider pursuing a minor or at least taking some computer science courses. Computer science majors should review their programs of study in consultation with their advisors each semester, preferably using the most recent Undergraduate Catalog.

Graduate Program Information

The department offers both Master of Science and Doctor of Philosophy graduate degrees in computer science, along with a Master of Science in Bioinformatics. We also encourage students in other disciplines to do a graduate minor in computer science. Graduate students typically work closely with a faculty member in a specific area of research. The department offers expertise in several research areas, such as: artificial intelligence and knowledge representation; computer and wireless networks; data mining and machine learning; game design and human-computer interaction; bioinformatics; high performance computing; software engineering and programming languages; theory of computing; and assistive technologies.

A number of laboratories have been established to coordinate research activities, including

- the Knowledge representation, Logic and Advanced Programming (KLAP) lab;
- the Play and Interactive Experiences for Learning (PIxL) lab;
- the Knowledge Discovery and Data Mining (KDD) lab;
- the Programming Languages, Environments, and Automated Software Engineering (PLEASE) lab;
- the Bioinformatics Research lab;
- the Multimedia Management lab;
- the Cryptography, Privacy and Security Research (CrySPR) lab; and
- the Network and Systems Optimization Lab (NSOL).

Department members are also directing the iCREDITS interdisciplinary Center of Research Excellence in Design of Intelligent Technologies for Smartgrids, offering educational and research opportunities in smartgrids.

Entrance Requirements for Graduate Study in Computer Science

The Graduate Record Exam (GRE) General Test is not required for admission; however, high GRE scores will strengthen a candidate's application and are highly regarded in the awarding of Graduate Assistantships. To be admitted without undergraduate deficiencies, an entering student must have completed undergraduate preparation substantially equivalent to that required for the Bachelor of Science degree in Computer Science at New Mexico State University; in particular, this includes courses equivalent to

Prefix	Title	Credits
C S 172	Computer Science I	4
C S 271	Object Oriented Programming	4
C S 272	Introduction to Data Structures	4
C S 273	Machine Programming and Organization	4
C S 278	Discrete Mathematics for Computer Science	4
C S 370	Compilers and Automata Theory	4
C S 371	Software Development	4
C S 471	Programming Language Structure I	3
C S 474	Operating Systems I	3

Deficiencies should be satisfied as early in the student graduate program as possible, through the regular undergraduate courses, the C S 460 - C S 468 transition courses, or through tests administered by faculty members in the relevant areas. Students should consult with their Graduate Advisor to address issues related to deficiencies. Deficiencies are also assigned to applicants whose transcripts denote low grades in selected areas. Admission is often denied to candidates with little background in Computer Science. Instructions for prospective applicants can be found at https://computerscience.nmsu.edu.

Entrance Requirements for Graduate Study in Bioinformatics

The Graduate Record Exam (GRE) General Test is not required for admission; however, high GRE scores will strengthen a candidate's application and are highly regarded in the awarding of Graduate Assistantships. Students wishing to enroll in the Master program in Bioinformatics must meet the following criteria:

1. Hold a BS degree, from an accredited institution of higher learning, in either a computational field (e.g., Computer Science) or in life sciences (preferably Biology, Biochemistry, or Environmental Sciences)
2. Hold a minimum grade point average of 3.2

Applicants will be expected to provide a Career statement, motivating the interest in bioinformatics and a minimum of three letters of reference.

Graduate Assistantships

Graduate assistantships (in the form of Teaching and Research assistantships) are expected to be available during the academic year. Inquiries should be addressed to the departmental Graduate Committee. Research assistantships are available at the discretion of individual research project leaders in the Department or elsewhere on campus.

Submitting detailed vitae, letters of reference, and GRE test scores are encouraged when applying for any assistantship.