The Department of Computer Science at Lamar University offers a Master of Science degree in Computer Science. It is an excellent program for those who have a background in Computer Science, but it is designed so that those without such a background can still complete the requirements for the degree within 2 years.

Both thesis and non-thesis options are available. The objective of the master’s degree is to produce professional computer scientists capable of contributing technically to the basic core areas of computer science as well as application areas. A mixture of course, laboratory and research work in the program is designed to place graduates at the forefront of technical excellence.

The department has a broad-based research program. Current faculty research interests include parallel and distributed processing, artificial intelligence, data and knowledge bases, computational complexity, real-time distributed processing, artificial intelligence, data and research in database, network simulation, and entertainment to medicine, to robotics and psychology and philosophy. If you want to do research in this exciting field, Lamar University’s Computer Science Graduate Program is a great place for career opportunities.

The Department of Computer Science at Lamar University is a 34- hour degree.

RESEARCH
The department has a broad-based research program. Current faculty research interests include parallel and distributed processing, artificial intelligence, data and knowledge bases, computational complexity, real-time embedded systems, operating systems, game development and graphics.

The Computer Science department has six switched Ethernet laboratories attached to the 10 gigabit-bandwidth campus network infrastructure through which Lamar University is connected to the Internet and World Wide Web. The equipment in the labs is abundant and available to all students. It is comprised of a diverse array of hardware and software running on HP and MAC workstations and servers, Intel-based PC, and AMD multiprocessors. The department offers image and video processing equipment for multimedia related classes and software for advanced courses and research in database, network simulation, symbolic computation, artificial intelligence, real-time embedded systems and computer graphics can be readily accessed from our servers. Wireless access to the Internet is in place within the Maes Building, where Computer Science is currently housed. Lamar University is connected to Internet2.

The department enjoys a friendly working relationship with local and national companies. The department’s Industrial Advisory Council is composed of representatives from regional/state industries and high-tech firms.

ADMISSION TO THE GRADUATE PROGRAM
Students seeking admission to this program must meet all general requirements of the College. Additional requirements are as follows:

1. A student must have a minimum score of 500 on the verbal and quantitative sections of the Graduate Record Examination (GRE).
2. A TOEFL score of at least 6.5 is required for those whose native language is not English.
3. Demonstrable knowledge of programming in a high-level language and operating systems is required. Leveling courses are available for those who have deficiencies in their background.
4. At least 15 hours of mathematics including differential and integral calculus, discrete mathematics and other courses selected from statistics, linear algebra, abstract algebra, numerical analysis and differential equations. Students not satisfying both conditions 1 and 2 will not meet the quantitative portion of the GRE exam and are given the time the Department reviews the applicant’s application. We do not consider need as one of the reasons for giving aid.

COMPUTER SCIENCE SCHOLARSHIPS
Scholarships are generally offered on the basis of the quantitative portion of the GRE exam and are given at the time the Department reviews the applicant’s application. We do not consider need as one of the reasons for giving aid. The only criteria are GRE scores, undergraduate Grade Point Average (GPA), and academic background. Thus, the financial statement that applicants are required to give Lamar University as part of the application process has no influence on whether we offer the student a scholarship or not.

ADMISSION TO CANDIDACY
After removal of all deficiencies and upon completion of an additional 12 hours of graduate credit, the student is required to submit a formal degree plan to the Computer Science Graduate Advisor and the Dean of the Graduate School.

ADMISSION TO CANDIDACY
Admission to candidacy is granted by the Dean of the Graduate School after the degree plan has been approved.

DEGREE REQUIREMENT
Core Course Requirement
(6 courses; 16 semester hours)

Students in the M.S. program in computer science are required to establish competence in several areas considered basic to the field of computer science. At least 28 hours of graduate work in computer science, not including the thesis or project, is required for a M.S. degree in computer science. The degree includes two specialization areas in computing (6 to 9 hours per specialization) chosen by the student. Specialization areas are listed below. One of the areas of specialization may be an area of computer applications outside of the department. In order to qualify for the M.S. degree, the student must earn a grade of "B" or better in each of the core courses and have a 3.0 GPA in all Computer Science courses.

Computer Science Specialization Areas:

- Area Artificial Intelligence
- Area Graphics
- Area Simulation/Modeling
- Area Software Engineering
- Area Database
- Area Architecture/Algorithms

Courses:
- CPSC 5370, COSC 5312, COSC 5318, CPSC 5375
- CPSC 5335, CPSC 5321
- COSC 5309
- CPSC 5360, COSC 5332
- COSC 5311, COSC 5332, COSC 5333, CPSC 5340
- COSC 5335, COSC 5350, COSC 5313
- COSC 5320, COSC 5345, COSC 5328, CPSC 5335
- CPSC 5328, CPSC 5380
- COSC 5333, COSC 5302, COSC 5350
- CPSC 5325, CPSC 5326
- CPSC 5324, COSC 5325
- Mobile Computing

The Thesis option is a 34-hour degree.

The Project option is a 37-hour degree.
Culminating Academic Experience

**Option I (Thesis)**
1. Completion of the core requirements.
2. Completion of two areas of computer specialization. Specialization outside of the area of computer science may be chosen by the student under the guidance of the faculty adviser from the restricted list of courses at the end of the computer science course listing in catalog. At least a "B" (3.0) average must be maintained in the specialization areas. One “C” is permitted in these areas if it is balanced by an “A” in one other graduate level course.
3. Completion of COSC 5390 and COSC 5391 and submission of an acceptable thesis.
4. Completion of a total of 34 graduate semester hours, including the thesis with at least a 3.0 average in graduate computer science courses.
5. Successful oral defense of the Thesis. If a failure occurs, the defense may be repeated. A second failure will cause the student to be dropped from the degree program in computer science.

**Option II (Non-Thesis, but Project)**
1. Completion of the Core requirements.
2. Completion of two areas of computer specialization. Specializations outside of the area of computer science may be chosen by the student under the guidance of the faculty advisor from the restricted list of courses in the catalog. At least a “B” (3.0) average must be maintained in the specialization areas.
3. One “C” is permitted in these areas if it is balanced by an “A” in one other graduate level course.
4. All non-thesis students must take and satisfactorily complete COSC 5369, with a minimum grade of “B”. This course consists primarily of a significant implantation project and the submission of a written professional report.
5. Completion of a total of 37 hours in graduate level courses including the Final Project with at least a 3.0 average in computer science graduate courses.
6. Successful oral defense of the Project. If a failure occurs, the defense may be repeated. A second failure will cause the student to be dropped from the degree program in computer science.

**Prerequisite courses for incoming students (minimum required grade: B):**
- COSC 4301 Programming for Graduate Students (UNIX/Java)
- COSC 4302 Introduction to Operating Systems

**OTHER ACCEPTED GRADUATE COURSES**
A maximum number of two courses outside the computer science department can be used as an elective in the M.S. program with the approval of the department chair. Frequently, students take courses offered by Electrical Engineering, Industrial Engineering and Mathematics. Courses in the Colleges of Business, Arts and Sciences, and Fine Arts are also eligible for consideration as electives in the M.S. program.

**THE GRADUATE FACULTY**

**Dr. Stefan Andrei, Associate Professor**
Department Chair
Ph.D., Hamburg University
Real Time Embedded Systems, Theoretical Computer Science, Systems Verification, Software Engineering

**Dr. Peggy Israel Doerschuk, Professor**
Ph.D., Tulane University
Neural Networks and Artificial Intelligence

**Dr. Hikyoo Koh, Professor**
Ph.D., University of Pittsburgh
Automated Reasoning and Heuristic Search, Computational Complexity Theory, Software Testing

**Dr. Jiangjiang Liu, Associate Professor**
Ph.D., The State University at Buffalo, SUNY
Computer Architecture, Multimedia and Embedded Systems

**Dr. Kami Makki, Associate Professor**
Ph.D., University of Queensland, Australia
Databases and Knowledge-based Systems in Wireless and Mobile Devices

**Dr. Lawrence J. Osborne, Professor**
Ph.D., University of Missouri-Rolla
Parallel Processing, Operating Systems, Distributed Systems, and Graphics

**Dr. Timothy Roden, Associate Professor**
Ph.D., University of North Texas
Computer Game Development, Computer Graphics, and Mobile Application Development

**Dr. Bo Sun, Associate Professor**
Ph.D., Texas A&M University
Computer Security, Intrusion Detection, Simulation, and Distributed Systems

**Dr. Jing Zhang, Assistant Professor**
Ph.D., University of South Florida
Digital Image and Video Processing, Medical Image Analysis, Computer Graphics, and Pattern Recognition

**Dr. Sujing Wang, Assistant Professor**
Ph.D., University of Houston
Data Mining and Knowledge Discovery, Big Data, Cloud Computing, Geographic Information Systems

For application materials and information about admission, financial aid, or financial aid, contact:
- Office of Graduate Admission
  Lamar University
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  Beaumont, Texas 77710
  Phone: (409) 880-8888
  gradmissions@lamar.edu

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