

COMPUTER SCIENCE PLAN A. (THESIS OPTION), MASTER OF SCIENCE

Admission Requirements

Admission to the Program is accomplished in accord with the requirements for admission to the Graduate School at Texas Southern University. The entire admission process will be under the direction of the Graduate Committee in the Department of Computer Science and the Graduate Council in the Graduate School at the University.

For unconditional admission, the University requirements, as well as the Program requirements, are as follows:

1. Graduation with the bachelor's degree, or its equivalent, from an accredited college or university. An example of the "equivalent," as indicated may be an international student who has graduated from a college or university that issues a diploma or certificate instead of a degree.
2. A satisfactory undergraduate sequence of courses in the proposed major.
3. A grade point average in all undergraduate work of 2.50 (C+) or better or a grade point average of 3.0 for the last 60 semester hours of undergraduate course work.
4. A score on the aptitude section of the Graduate Record Examination that will be used in conjunction with other admission factors.
5. A score of at least 550 on the TOEFL, if the applicant has a degree from a non US university

Conditional admission may be given to applicants who do not satisfy all of the requirements for unconditional admission in accord with existing University procedures. However, final disposition of these cases ultimately rests with the Dean of the Graduate School.

In addition to the general requirements for admission referenced above, applicants for admission to graduate standing in Computer Science are expected to present evidence of having completed the following courses with the minimum number of semester credit hours indicated with grades of "C" or better:

Code	Title	Hours
	Object Oriented Programming/C++ or JAVA	3
	Computer Architecture /Computer Networks	3
	Data Structures	3

Conditional Admission:

Students who fail to satisfy the unconditional admission criteria may be admitted on a conditional basis. Under conditional admission, the admission requirements are as follows:

1. Graduation with the bachelor's degree, or its equivalent, from an accredited college or university. Official transcripts from each institution attended as a registered student must be submitted. International applicants will need to provide a detailed course-by-course transcript evaluation from a TSU approved transcript evaluation service provider and the evaluation must clearly indicate equivalency to a US Bachelor's degree.

2. A grade point average in all undergraduate work of 2.5 (C) or better or a grade point average of 3.0 for the last 60 semester hours of undergraduate course work.
3. A score on the aptitude section of the Graduate Record Examination (GRE) that will be used in conjunction with other admission factors.
4. International applicants need to submit an official and acceptable TOEFL score: A score of at least 550 on the paper-based test, 213 on the computer-based test, or 79 on the internet-based test of the TOEFL. An official IELTS score can be submitted in lieu of TOEFL in which case a minimum overall band score of 6.0 is required.

Students admitted conditionally will be required to meet the unconditional admission criteria by completing a graduate Computer Science immersive course CS 501 with a satisfactory grade (S) or, alternatively, by passing CS 241 and CS 243 with a grade of C or better for each class respectively. These preparatory courses do not count towards the Masters in Computer Science degree and the total credit hours required. Failure to satisfy unconditional admission criteria within the first semester of conditional admission will result in the student being dismissed from the program.

Degree Requirements

After successfully completing the course requirements to be described below, students admitted to the Program must pass a department-administered Qualifying Examination upon completion of those courses designated as "core courses" for the M.S. in Computer Science. This examination must be passed after no more than two attempts and prior to embarking upon a thesis, if the curriculum plan described below that requires a thesis (Plan A) is followed.

A student cannot be accepted to "candidacy status" for the M.S. in Computer Science until the Qualifying Examination is successfully completed.

An overall summary of the general requirements for the M.S. in Computer Science follows:

1. Completion of a total of thirty (31) semester credit hours in Computer Science (500 and 600 Level) as described in detail below through Plan A or Plan B with a grade point average of 3.00 or better.
2. Completion and presentation (through an oral defense) of a thesis to a committee composed of members of the Department of Computer Science and representatives of the Graduate School, if the Plan A curriculum of study is selected.
3. Completion of an application for graduation.

Curriculum Summary

In designing the overall curriculum of study for the M.S. in Computer Science, the guidelines for computer science curriculum content from the Association for Computing Machinery (ACM) were consulted. The ACM is a highly respected professional organization that has guided the development of computer science educational programs for many years. Essentially, the ACM recognizes a set of fourteen (14) content areas that represent the body of knowledge for computer science. These areas are as follows:

1. Discrete Structures (DS)
2. Programming Fundamentals (PF)
3. Algorithms and Complexity (AL)
4. Architecture and Organization (AR)

5. Operating Systems (OS)
6. Net-Centric Computing (NC)
7. Programming Languages (PL)
8. Human-Computer Interaction (HC)
9. Graphics and Visual Computing (GV)
10. Intelligent Systems (IS)
11. Information Management (IM)
12. Social and Professional Issues (SP)
13. Software Engineering (SE)
14. Computational Science (CN)

The M.S. in Computer Science, as proposed, requires the completion of thirty (31) semester credit hours to be completed over a two- year period. Students enrolled will have the option of either doing a thesis (Plan A) or not doing one (Plan B). For the Plan A curriculum, six (6) semester credit hours are devoted to original research, while Plan B curriculum requires the completion of six (6) extra elective credits and an independent Master's project.

For Plans A and B, 13 semester credit hours through five courses constitute a core curriculum that must be completed before a student is allowed to establish his/her candidacy for the M.S. Degree Plan A. If the student elects to follow Plan A, he/she is appointed a Thesis Advisor by the Chairperson of the Department of Computer Science in accord with the regulations of the Graduate School.

The five core courses address the first seven content areas of the fourteen total areas referenced by the ACM. The remaining content areas are addressed in elective offerings in accord with the backgrounds and research interests of the faculty members to anchor the overall graduate program.

Thus, the Plan A curriculum requires completion of 5 core courses for 13 semester credit hours, 4 elective courses for 12 semester credit hours, and 6 semester credit hours of thesis research for a total of 31 semester credit hours.

The five core courses are listed below. Reference is made to the ACM content area(s) addressed at the end of each course title.

Code	Title	Hours
CS 511	Alg Anal & Data Str (ACM content areas: PF, PL and AL)	3
CS 531	Comp Arch (ACM content area: AR)	3
CS 541	Operating Systems (ACM content areas: OS and NC)	3
CS 551	Theory of Computation (ACM content areas: DS and AL)	3
CS 599	Graduate Seminar Computer Sci (ACM content areas: NC, HC, and PL)	1
Total Hours		13

The following courses are intended as electives for the degree program with ACM content areas noted:

Code	Title	Hours
CS 545	Computer Networks (ACM content areas: NC and OS)	3
CS 547	Cryptography & Comp Sec (ACM content areas: SP and NC.)	3

CS 553	Automata & Formal Lngs (ACM content areas: PL, AL)	3
CS 571	Artificial Intelligence (ACM content area: IS)	3
CS 583	Data Mining (ACM content area: IM)	3
CS 591	Web Services (ACM content areas: NC, HC, and PL)	3
CS 661	Adv Tps in Sfw Eng (ACM content area: SE)	3
CS 681	Adv DB Mgmt Sys (ACM content area: IM)	3
CS 696	Special Topics in CS (ACM content areas: All Possible)	3
CS 697	Independent Master's Pjrt (ACM content areas: All Possible)	3
CS 698	Mst Thes/Rsch I (ACM content areas: All Possible)	1-3
CS 699	Mst Thes/Rsch II (ACM content areas: All Possible)	1-3

Plan A-(Thesis) Degree Plan

Course	Title	Hours
First Year		
First Semester		
CS 511	Alg Anal & Data Str	3
CS 531	Comp Arch	3
CS Elective (500 or 600 level)		3
Hours		9
Second Semester		
CS 541	Operating Systems	3
CS 551	Theory of Computation	3
CS 599	Graduate Seminar Computer Sci	1
Hours		7
Second Year		
First Semester		
CS 698	Mst Thes/Rsch I	3
CS Elective (5XX or 6XX)		3
CS Elective (5XX or 6XX)		3
Hours		9
Second Semester		
CS 699	Mst Thes/Rsch II	3
CS Elective (5XX or 6XX)		3
Hours		6
Total Hours		31