COMPUTER SCIENCE, MASTER OF SCIENCE

Overview

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The objective of the Master of Science in Computer Science program (MSCS) is to prepare graduate students with the necessary knowledge and skill components in current computing and information systems, as required by business, government, and academia research. Specific current technology fields include courses in:

- cyber security,
- mobile computing,
- big-data systems,
- cloud based systems, and
- enterprise systems.

The program is designed to meet the needs of current working professionals, who want to get a graduate degree to stay abreast of the changing field of computing, as well as those with a recent bachelor's degree to advance their knowledge and skills for a career in computing and cyber security.

Admissions

Admission Requirements

All applicants to the Computer Science program will be reviewed by the department admissions committee which is composed of the graduate advisor and department chair with final approval by the Associate Dean for the College of Business to determine eligibility for admission to the program based on the criteria listed below.

An applicant for admission must have the necessary academic preparation to complete graduate level courses in Computer Science.

Students that have completed a bachelor's degree in Computer Science from a regionally accredited college or university with a composite GPA of 3.0/4.0 or better in all prior advanced-level (Junior, Senior, and Graduate work) Math and Computer Science related work will receive unconditional admission to the program. Students that have completed a bachelor's degree in Computer Science from a regionally accredited college or university with a composite GPA below a 3.0/4.0 but above a 2.5/4.0 will be granted conditional admission for the first semester in the MSCS program.

If the student has not completed a bachelor's degree in Computer Science but has a minimum GPA of a 3.0/4.0 or better in their major, they will be granted conditional admission in the MSCS program.

All students on conditional admission will be required to complete CSCI 5337 Applications Programming at A&M-SA in the first semester of admission and get a grade of "B" or better, in order to be permitted to continue in the MS CS program. For conditionally admitted students who successfully complete CSCI 5337 Applications Programming, it will be used as a required elective and will not increase their graduation hours.

Any student admitted on conditional status that earns a "C" or lower in CSCI 5337 Applications Programming at A&M-SA, will not be permitted to continue in the MS CS program.

In order for a student to be successful in the Computer Science program at the university, a demonstrated proficiency in the use of the English language is required. If a student's undergraduate degree is not from a regionally accredited university of the United States, then the student must submit TOEFL scores for evaluation.

Students admitted to the Computer Science program may not apply for more than 6 hours of department-approved graduate level coursework to be transferred from another regionally accredited college or university. For conditionally admitted students, CSCI 5337 Applications Programming cannot be transferred in.

Program Requirements

Degree Requirements

The M.S. in Computer Science has two routes to degree completion- Thesis or Non-Thesis. The Non-Thesis route consists of 30 hours of graduate level coursework. The Thesis route consists of 30 hours of graduate level coursework which includes 6 hours of thesis work. CSCI 5395 Thesis will be taken once each semester in the last two final semesters of the student's program before graduation. The student will complete their thesis and defense to demonstrate a Master's level education in Computer Science.

Curriculum

Non-Thesis

Non-thesis track students are required to take 12 hours of required core courses, 12 hours of prescribed elective courses, and 6 hours of approved elective courses in computer science or information systems for a total of 30 hours. The prescribed electives are in three different tracks: Software Applications track, Cyber Security track, Enterprise Systems track. A student may pick any one of the tracks and complete the courses in that track. For the free approved electives, a student can take any of the courses not in the prescribed track that they have taken, or an approved graduate course in computing or information systems. Prescribed electives in one track may be used as free electives for another track, as long as prerequisites are met. Picking a track is not mandatory –students may elect to complete six elective courses as long as prerequisites are met and four of the six elective courses are CSCI courses.

Code	Title	Credits
Required Core Courses (of all students)		12
Prescribed Elective Courses		12
Free Approved Elective Courses		6
Total Credits		**30**

Thesis

Thesis track students are required to take 12 hours of required core courses, 12 hours of prescribed elective courses or free approved elective courses in computer science or information systems, and 6 hours of thesis for a total of 30 hours.

Code	Title	Credits
Required Core Courses (of all students)		12
Select twelve hours from the following:		12
	Prescribed Elective Courses	
	Free Approved Elective Courses	

Thesis	6
Total Credits	**30**

Curricula

Code	Title	Credits
Required Core Courses		
CSCI 5304	Database Systems	3
CSCI 5306	Computer Networks	3
CSCI 5362	Operating Systems	3
CSCI 5343	Algorithms	3
Electives		
Select 12 hours of the following prescribed elective courses or free approved elective courses in computer science or information systems:		12
Prescribed Elective Courses – Software Applications track		
CSCI 5353	Secure Software Development	
CSCI 5325	Mobile App Development I	
CSCI 5316	Software Engineering	
CSCI 5366	Software Quality Assurance	
Prescribed Elective Courses – Cyber Security track		
CSCI 5321	Info Assurance/Risk Management	
CSCI 5323	Cryptography/Secure Comm	
CSCI 5326	Security in Emerging Tech	
CSCI 5327	Information Security	
Prescribed Elective Courses – Enterprise Systems track		
CSCI 5311	Software Project Management	
CSCI 5320	Decision Support Systems	
CSCI 5331	Enterprise Resource Planning	
CSCI 5332	Bus Intelligence/Data Mining	
Free Approved Elective Courses (in addition to the prescribed courses)		
CSCI 5337	Applications Programming (Required elective for conditionally admitted students)	
CSCI 5313	Artificial Intelligence	
CSCI 5345	Mobile App Development II	
CISA 5334	Business Process Integration	
CISA 5340	Sys Analysis Design & Impl	
CSCI 5315	Big Data Analytics	
CSCI 5372	Cloud Computing	
CSCI 5393	Special Topic-Computer Science	
CSCI 5391	Graduate Seminar	
Thesis		
CSCI 5395	Thesis (taken twice - once in each of last two semesters)	6
Total Credits		**30**

Plan of Study

These suggested plans of study are intended to be used as a guide in conjunction with official degree requirements outlined in the catalog. This is an example of a degree track for a Computer Science major.

Non-Thesis Option

First Year

First Semester		**Credits**
CSCI 5304	Database Systems	3
CSCI 5306	Computer Networks (Prescribed Elective)	3
Prescribed Elective		3
	Credits	**9**
Second Semester		
CSCI 5362	Operating Systems	3
CSCI 5343	Algorithms	3
Prescribed Elective		3
	Credits	**9**

Second Year

First Semester		
Prescribed Elective		3
Free Approved Electives		6
	Credits	**9**
Second Semester		
Prescribed Elective		3
	Credits	**3**
	Total Credits	**30**

Thesis Option

First Year

First Semester		**Credits**
CSCI 5304	Database Systems	3
CSCI 5306	Computer Networks	3
Prescribed Elective		3
	Credits	**9**
Second Semester		
CSCI 5362	Operating Systems	3
CSCI 5343	Algorithms	3
Prescribed Elective		3
	Credits	**9**

Second Year

First Semester		
Prescribed or Free Approved Electives		6
CSCI 5395	Thesis	3
	Credits	**9**
Second Semester		
CSCI 5395	Thesis	3
	Credits	**3**
	Total Credits	**30**

[1] To be taken during the last semester with the approval of the graduate advisor.