APPLIED COMPUTER SCIENCE (MS)

Program Overview

The TSYS School of Computer Science offers the Master of Science in Applied Computer Science with three concentrations: Software Development, AI and Data Science, and General.

Career Opportunities

Based on the area of concentration chosen, the Master of Science in Applied Computer Science degree prepares you for a broad range of careers including:

- Software Engineers / Architects
- Computer Programmers / Software Developers
- Web Developers
- Machine learning Engineers
- Computer and Network Security Specialists
- Cybersecurity Professionals

Program of Study

The Master of Science in Applied Computer Science program requires students to complete 30 hours of computer science coursework and an exit course, CPSC 6000 Graduate Exit Examination in Computer Science. The students must select one of the following three concentrations:

1. Software Development
2. AI and Data Science
3. General

Software Development

Code	Title	Credit Hours
Area 1 Program Core		
CPSC 6109	Algorithms Analysis and Design	3
CPSC 6119	Object-Oriented Development	3
CPSC 6185	Intelligent Systems	3
CYBR 6126	Introduction to Cybersecurity	3
Area 1 Total		12
Area 2 Program Concentration		
CPSC 6127	Contemporary Issues in Database Management Systems	3
CPSC 6175	Web Engineering and Technologies	3
CPSC 6177	Software Design and Development	3
CPSC 6179	Software Project Planning and Management	3
Area 2 Total		12
Area 3: Program Electives		6
Select either of the following options:		
6 credits of 6000-level CPSC or CYBR courses (including an internship) [1]		
6 credits of Thesis (CPSC 6985, and CPSC 6986)		
Area 4: Graduate Exit Examination		
CPSC 6000	Graduate Exit Examination in Computer Science [2]	0
Total Credit Hours		**30**

[1] With the exception of CPSC 6105 Fundamental Principles of Computer Science, CPSC 6103 Computer Science Principles for Teachers, and CPSC 6106 Fundamentals of Computer Programming and Data Structures.

[2] Graduating students must successfully complete CPSC 6000 Graduate Exit Examination in Computer Science which will require the student to complete an exit survey, an exit interview, and a comprehensive exam.

AI and Data Science

Code	Title	Credit Hours
Area 1 Program Core		
CPSC 6109	Algorithms Analysis and Design	3
CPSC 6119	Object-Oriented Development	3
CPSC 6185	Intelligent Systems	3
CYBR 6126	Introduction to Cybersecurity	3
Area 1 Total		12
Area 2 Program Concentration		
CPSC 6114	Applied Machine Learning	3
CPSC 6121	Data Science and Big Data Analytics	3
CPSC 6124	Deep Learning	3
CPSC 6147	Data Visualization and Statistical Inference	3
Area 2 Total		12
Area 3: Program Electives		
Select either of the following options:		6
6 credits of 6000-level CPSC or CYBR courses (including an internship) [1]		
6 credits of Thesis (CPSC 6985, and CPSC 6986)		
Area 4: Graduate Exit Examination		
CPSC 6000	Graduate Exit Examination in Computer Science [2]	0
Total Credit Hours		**30**

[1] With the exception of CPSC 6105 Fundamental Principles of Computer Science, CPSC 6103 Computer Science Principles for Teachers, and CPSC 6106 Fundamentals of Computer Programming and Data Structures. Recommended elective: CPSC 6127 Contemporary Issues in Database Management Systems.

[2] Graduating students must successfully complete CPSC 6000 Graduate Exit Examination in Computer Science which will require the student to complete an exit survey, an exit interview, and a comprehensive exam.

General

Code	Title	Credit Hours
Area 1 Program Core		
CPSC 6109	Algorithms Analysis and Design	3
CPSC 6119	Object-Oriented Development	3
CPSC 6185	Intelligent Systems	3
CYBR 6126	Introduction to Cybersecurity	3
Area 1 Total		12
Area 2 Program Concentration		

CPSC 6125	Operating Systems Design and Implementation	3
CPSC 6127	Contemporary Issues in Database Management Systems	3
CPSC 6157	Network and Cloud Management	3
CPSC 6177	Software Design and Development	3
Area 2 Total		12
Area 3: Program Electives		**6**
Select either of the following options:		
6 credits of 6000-level CPSC or CYBR courses (including an internship) [1]		
6 credits of Thesis (CPSC 6985, and CPSC 6986)		
Area 4: Graduate Exit Examination		
CPSC 6000	Graduate Exit Examination in Computer Science [2]	0
Total Credit Hours		**30**

[1] With the exception of CPSC 6105 Fundamental Principles of Computer Science, CPSC 6103 Computer Science Principles for Teachers, and   CPSC 6106 Fundamentals of Computer Programming and Data Structures.

[2] Graduating students must successfully complete CPSC 6000 Graduate Exit Examination in Computer Science which will require the student to complete an exit survey, an exit interview, and a comprehensive exam.

Admission Requirements

- An undergraduate degree in any field from an accredited college or university with a minimum 2.75 cumulative undergraduate GPA. The minimum GPA requirement is waived for those with a GRE score of 290 or above or acceptable demonstrated work experience in software development.

- Students who meet the admission requirements but do not have a CS or related degree will be required to complete the courses CPSC 6105 Fundamental Principles of Computer Science and CPSC 6106 Fundamentals of Computer Programming and Data Structures with a grade of B or better before taking6000-level courses for graduate credit in the program.

- A current resume reflecting professional experience and/or academic achievements.