B.S. COMPUTER INFORMATION SYSTEMS

OVERVIEW

The Bachelor of Sciences (BS) in Computer Information Systems at Texas A&M University-Central Texas provides a solid foundation in critical thinking, analysis, design, building, and implementation of information systems. Students will gain a specialized knowledge of information systems and general knowledge of business. Studies will include systems analysis, design, and management, as well as programming, database management, IT security and risk management, networking, and software engineering.

Depending on career preference, students can choose from four areas of specialization: Data Analytics, Cybersecurity, Management& Networking and Software Engineering & Database Design.

Program Level Student Learning Outcomes

The student will be able to:

- Demonstrate proficiency in written communications on technical subjects appropriate to the discipline.
- Recognize a reasoned resolution to an ethical challenge in computing context
- Design appropriate computing solutions to business problems.
- Apply knowledge to address the IT security needs of an organization.
- Demonstrate knowledge proficiency in the area of concentration: Networking Management, Software Engineering Database Design, Cyber Security, Data Analytics.

Bachelor of Science - Computer Information Systems Data Analytics Concentration Program Requirements

Refer to the General Education Core Requirements (https://catalog.tamuct.edu/undergraduate-information/general-education-core-requirements/) page for more information on the CORE REQ coursework. The Field of Study (FOS) courses are listed in the footnotes (if applicable). At least 120 credit hours are required for the degree.

Code	Title	Credit Hours
First Year		
Fall		
CORE REQ Communication (010)		3
CORE REQ Mathematics (020) [1]		3
CORE REQ American History (060)		3
ECON 2302	Principles of Microeconomics (CORE REQ (080))	3
Any Level Elective [1]		3
Spring		
SPCH 1311	Introduction to Speech Communication (CORE REQ (010))	3
or SPCH 1315	Public Speaking	
or SPCH 1321	Business & Professional Communication	
CORE REQ Creative Arts (050)		3
CORE REQ American History (060)		3
CORE REQ Component Area Option (090) [1]		3
Any Level CIS Elective [1]		3
Second Year		
Fall		
CORE REQ Life and Physical Sciences (030) [1]		3
CORE REQ Government/Political Science (070)		3
CORE REQ Component Area Option (090) [1]		3
Any Level Elective [1]		3
Any Level Elective [1]		3
Spring		
CORE REQ Life and Physical Sciences (030) [1]		3
CORE REQ Language, Philosophy, and Culture (040)		3
CORE REQ Government/Political Science (070)		3
Any Level Elective [1]		3
Any Level Elective [1]		3
Third Year		
Fall		
CIS 3300	Computer Technology and Impact [1]	3
or BCIS 1305	Business Computer Applications	
or COSC 1301	Introduction to Computing	
CIS 3303	Programming Logic and Design	3
or COSC 1315	Fundamentals of Programming	
CIS 3315	Web Site Development and Design	3
CIS 3302	Introduction to Business Analytics	3
Spring		
CIS 3330	C++ Programming [1]	3
or CIS 3331	Visual Basic Programming	
or CIS 3332	Java Programming	
or COSC 1320	C Programming I	
or COSC 1336	Programming Fundamentals I	
Upper-Level CIS or COSC Elective [1]		3
BUSI 3311	Business Statistics	3
CIS 4341	Information Technology Security and Risk Management	3
CIS 3347	Data Communications and Infrastructure	3
CIS 3306	Data Visualization	3
Fourth Year		
Fall		
CIS 4350	Management Information Systems	3
CIS 4301	Database Theory and Practices	3
CIS 3365	System Analysis and Design	3
CIS 4302	Web & Social Analytics	3
CIS 3360	Ethics in Computing	3
Spring		
CIS 4360	Strategic Information Systems	3

CIS 4352	Structured Query Language	3
CIS 4351	IS Project Management	3
CIS 4303	Data Mining	3
Upper-Level CIS or COSC Elective		3
CIS 4090	Computer Information Systems Capstone Assessment	0
Total Credit Hours		**120**

[1] Lower Level Electives, Any Level Electives, Component Area Options, or Degree Requirements (DEG REQ) may consist of the FOS courses: MATH 2413, MATH 2414, MATH 2305, COSC 1436, COSC 1437, COSC 2436, PHYS 2425, PHYS 2426 (or 3 credit hour lecture and 1 hour lab courses for PHYS), one of the following: COSC 2325, COSC 2425.

Bachelor of Science - Computer Information Systems Cybersecurity Concentration Program Requirements

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The program listed is a general guideline for semester coursework, speak with a college advisor for an individualized student education plan.

Code	Title	Credit Hours
First Year		
Fall		
CORE REQ Communication (010)		3
CORE REQ Mathematics (020) [1]		3
CORE REQ American History (060)		3
ECON 2302	Principles of Microeconomics (CORE REQ (080))	3
Any Level Elective [1]		3
Spring		
SPCH 1311	Introduction to Speech Communication (CORE REQ (010))	3
or SPCH 1315	Public Speaking	
or SPCH 1321	Business & Professional Communication	
CORE REQ Creative Arts (050)		3
CORE REQ American History (060)		3
CORE REQ Component Area Option (090) [1]		3
Any Level CIS Elective [1]		3
Second Year		
Fall		
CORE REQ Life and Physical Sciences (030) [1]		3
CORE REQ Government/Political Science (070)		3
CORE REQ Component Area Option (090) [1]		3
Any Level Elective [1]		3
Any Level Elective [1]		3
Spring		
CORE REQ Life and Physical Sciences (030) [1]		3
CORE REQ Language, Philosophy, and Culture (040)		3
CORE REQ Government/Political Science (070)		3
Any Level Elective [1]		3
Any Level Elective [1]		3
Third Year		
Fall		
CIS 3300	Computer Technology and Impact [1]	3
or BCIS 1305	Business Computer Applications	
or COSC 1301	Introduction to Computing	
CIS 3303	Programming Logic and Design	3
or COSC 1315	Fundamentals of Programming	
CIS 3315	Web Site Development and Design	3
CIS 4341	Information Technology Security and Risk Management	3
CIS 3347	Data Communications and Infrastructure	3
Spring		
CIS 3330	C++ Programming [1]	3
or CIS 3331	Visual Basic Programming	
or CIS 3332	Java Programming	
or COSC 1320	C Programming I	
or COSC 1336	Programming Fundamentals I	
CIS 3361	Introduction to Computer Forensics	3
CIS 4342	Computer Security Principles and Practices	3
CIS 3360	Ethics in Computing	3
Fourth Year		
Upper-Level CIS or COSC Elective		3
Fall		
CIS 4350	Management Information Systems	3
CIS 3365	System Analysis and Design	3
CIS 4301	Database Theory and Practices	3
CIS 4345	Network and Systems Security	3
CIS 4346	Applied Security	3
Spring		
BUSI 3311	Business Statistics	3
CIS 4360	Strategic Information Systems	3
CIS 4351	IS Project Management	3
CIS 4348	Security Trends and Malware Analysis	3
Upper-Level CIS or COSC Elective		3
CIS 4090	Computer Information Systems Capstone Assessment	0
Total Credit Hours		**120**

[1] Lower Level Electives, Any Level Electives, Component Area Options, or Degree Requirements (DEG REQ) may consist of the FOS courses: MATH 2413, MATH 2414, MATH 2305, COSC 1436, COSC 1437, COSC 2436, PHYS 2425, PHYS 2426 (or 3 credit hour lecture and 1 hour lab courses for PHYS), one of the following: COSC 2325, COSC 2425.

Bachelor of Science - Computer Information Systems Management and Networking Concentration Program Requirements

Refer to the General Education Core Requirements (https://catalog.tamuct.edu/undergraduate-information/general-education-core-requirements/) page for more information on the CORE REQ coursework. The Field of Study (FOS) courses are listed in the footnotes (if applicable). At least 120 credit hours are required for the degree.

Code	Title	Credit Hours
First Year		
Fall		
CORE REQ Communication (010)		3
CORE REQ Mathematics (020) [1]		3
CORE REQ American History (060)		3
ECON 2302	Principles of Microeconomics (CORE REQ (080))	3
Any Level Elective [1]		3
Spring		
SPCH 1311	Introduction to Speech Communication (CORE REQ (010))	3
or SPCH 1315	Public Speaking	
or SPCH 1321	Business & Professional Communication	
CORE REQ Creative Arts (050)		3
CORE REQ American History (060)		3
CORE REQ Component Area Option (090) [1]		3
Any Level CIS Elective [1]		3
Second Year		
Fall		
CORE REQ Life and Physical Sciences (030) [1]		3
CORE REQ Government/Political Science (070)		3
CORE REQ Component Area Option (090) [1]		3
Any Level Elective [1]		3
Any Level Elective [1]		3
Spring		
CORE REQ Life and Physical Sciences (030) [1]		3
CORE REQ Language, Philosophy, and Culture (040)		3
CORE REQ Government/Political Science (070)		3
Any Level Elective [1]		3
Any Level Elective [1]		3
Third Year		
Fall		
CIS 3300	Computer Technology and Impact [1]	3
or BCIS 1305	Business Computer Applications	
or COSC 1301	Introduction to Computing	
CIS 3303	Programming Logic and Design	3
or COSC 1315	Fundamentals of Programming	
CIS 3315	Web Site Development and Design	3
CIS 3347	Data Communications and Infrastructure	3
Spring		
CIS 3330	C++ Programming [1]	3
or CIS 3331	Visual Basic Programming	
or CIS 3332	Java Programming	
or COSC 1320	C Programming I	
or COSC 1336	Programming Fundamentals I	
BUSI 3311	Business Statistics	3
CIS 4341	Information Technology Security and Risk Management	3
CIS 3305	Operating Systems Theory and Practice	3
CIS 3360	Ethics in Computing	3
Fourth Year		
Fall		
CIS 4350	Management Information Systems	3
CIS 4301	Database Theory and Practices	3
CIS 3365	System Analysis and Design	3
CIS 4376	Network Administration	3
CIS 4345	Network and Systems Security	3
Spring		
CIS 4360	Strategic Information Systems	3
CIS 4351	IS Project Management	3
CIS 4335	UNIX Systems Administration	3
CIS 4378	Comprehensive Networking	3
Upper-Level CIS or COSC Elective		3
Upper-Level CIS or COSC Elective		3
CIS 4090	Computer Information Systems Capstone Assessment	0
Total Credit Hours		**120**

[1] Lower Level Electives, Any Level Electives, Component Area Options, or Degree Requirements (DEG REQ) may consist of the FOS courses: MATH 2413, MATH 2414, MATH 2305, COSC 1436, COSC 1437, COSC 2436, PHYS 2425, PHYS 2426 (or 3 credit hour lecture and 1 hour lab courses for PHYS), one of the following: COSC 2325, COSC 2425.

Bachelor of Science - Computer Information Systems Software Engineering and Database Design Concentration Program Requirements

Refer to the General Education Core Requirements (https://catalog.tamuct.edu/undergraduate-information/general-education-core-requirements/) page for more information on the CORE REQ

coursework. The Field of Study (FOS) courses are listed in the footnotes (if applicable). At least 120 credit hours are required for the degree.

Code	Title	Credit Hours
First Year		
Fall		
CORE REQ Communication (010)		3
CORE REQ Mathematics (020) [1]		3
CORE REQ American History (060)		3
ECON 2302	Principles of Microeconomics (CORE REQ (080))	3
Any Level Elective [1]		3
Spring		
SPCH 1311	Introduction to Speech Communication (CORE REQ (010))	3
or SPCH 1315	Public Speaking	
or SPCH 1321	Business & Professional Communication	
CORE REQ Creative Arts (050)		3
CORE REQ American History (060)		3
CORE REQ Component Area Option (090) [1]		3
Any Level CIS Elective [1]		3
Second Year		
Fall		
CORE REQ Life and Physical Sciences (030) [1]		3
CORE REQ Government/Political Science (070)		3
CORE REQ Component Area Option (090) [1]		3
Any Level Elective [1]		3
Any Level Elective [1]		3
Spring		
CORE REQ Life and Physical Sciences (030) [1]		3
CORE REQ Language, Philosophy, and Culture (040)		3
CORE REQ Government/Political Science (070)		3
Any Level Elective [1]		3
Any Level Elective [1]		3
Third Year		
Fall		
CIS 3300	Computer Technology and Impact [1]	3
or BCIS 1305	Business Computer Applications	
or COSC 1301	Introduction to Computing	
CIS 3303	Programming Logic and Design	3
or COSC 1315	Fundamentals of Programming	
CIS 3315	Web Site Development and Design	3
CIS 3330	C++ Programming [1]	3
or CIS 3331	Visual Basic Programming	
or CIS 3332	Java Programming	
or COSC 1320	C Programming I	
or COSC 1336	Programming Fundamentals I	
Spring		
CIS 3340	Advanced C++ Programming	3
or CIS 3341	Advanced Visual Basic Programming	
or CIS 3342	Advanced Java Programming	
or CIS 3343	C# Programming for Windows and the Web	
BUSI 3311	Business Statistics	3
CIS 4341	Information Technology Security and Risk Management	3
CIS 3347	Data Communications and Infrastructure	3
CIS 3360	Ethics in Computing	3
Fourth Year		
Fall		
CIS 4350	Management Information Systems	3
CIS 4351	IS Project Management	3
CIS 3365	System Analysis and Design	3
CIS 4301	Database Theory and Practices	3
CIS 3351	Data Structures	3
Spring		
CIS 4360	Strategic Information Systems	3
CIS 4340	Algorithm Design and Analysis	3
CIS 4352	Structured Query Language	3
CIS 4379	Software Engineering for E-Business	3
Upper-Level CIS or COSC Electives		3
Upper-Level CIS or COSC Electives		3
CIS 4090	Computer Information Systems Capstone Assessment	0
Total Credit Hours		**120**

[1] Lower Level Electives, Any Level Electives, Component Area Options, or Degree Requirements (DEG REQ) may consist of the FOS courses: MATH 2413, MATH 2414, MATH 2305, COSC 1436, COSC 1437, COSC 2436, PHYS 2425, PHYS 2426 (or 3 credit hour lecture and 1 hour lab courses for PHYS), one of the following: COSC 2325, COSC 2425.

Bachelor of Science - Computer Information Systems Without Concentration Program Requirements

Refer to the General Education Core Requirements (https://catalog.tamuct.edu/undergraduate-information/general-education-core-requirements/) page for more information on the CORE REQ coursework. The Field of Study (FOS) courses are listed in the footnotes (if applicable). At least 120 credit hours are required for the degree.

Code	Title	Credit Hours
First Year		
Fall		
CORE REQ Communication (010)		3
CORE REQ Mathematics (020) [1]		3

CORE REQ American History (060)		3
ECON 2302	Principles of Microeconomics (CORE REQ (080))	3
Any Level Elective [1]		3
Spring		
SPCH 1311	Introduction to Speech Communication (CORE REQ (010))	3
or SPCH 1315	Public Speaking	
or SPCH 1321	Business & Professional Communication	
CORE REQ Creative Arts (050)		3
CORE REQ American History (060)		3
CORE REQ Component Area Option (090) [1]		3
Any Level CIS Elective [1]		3
Second Year		
Fall		
CORE REQ Life and Physical Sciences (030) [1]		3
CORE REQ Government/Political Science (070)		3
CORE REQ Component Area Option (090) [1]		3
Any Level Elective [1]		3
Any Level Elective [1]		3
Spring		
CORE REQ Life and Physical Sciences (030) [1]		3
CORE REQ Language, Philosophy, and Culture (040)		3
CORE REQ Government/Political Science (070)		3
Any Level Elective [1]		3
Any Level Elective [1]		3
Third Year		
Fall		
CIS 3300	Computer Technology and Impact [1]	3
or BCIS 1305	Business Computer Applications	
or COSC 1301	Introduction to Computing	
CIS 3303	Programming Logic and Design	3
or COSC 1315	Fundamentals of Programming	
CIS 3315	Web Site Development and Design	3
Upper-Level CIS or COSC Elective		3
CIS 3347	Data Communications and Infrastructure	3
Spring		
CIS 3330	C++ Programming [1]	3
or CIS 3331	Visual Basic Programming	
or CIS 3332	Java Programming	
or COSC 1320	C Programming I	
or COSC 1336	Programming Fundamentals I	
BUSI 3311	Business Statistics	3
CIS 4341	Information Technology Security and Risk Management	3
Upper-Level CIS or COSC Elective		3
CIS 3360	Ethics in Computing	3
Fourth Year		
Fall		
CIS 4350	Management Information Systems	3
CIS 4301	Database Theory and Practices	3
CIS 3365	System Analysis and Design	3
Upper-Level CIS or COSC Elective		3
Upper-Level CIS or COSC Elective		3
Spring		
CIS 4360	Strategic Information Systems	3
Upper-Level CIS or COSC or COBA Elective [2]		3
Upper-Level CIS or COSC or COBA Elective [2]		3
Upper-Level CIS or COSC or COBA Elective [2]		3
Upper-Level CIS or COSC Elective		3
CIS 4090	Computer Information Systems Capstone Assessment	0
Total Credit Hours		**120**

[1] Lower Level Electives, Any Level Electives, Component Area Options, or Degree Requirements (DEG REQ) may consist of the FOS courses: MATH 2413, MATH 2414, MATH 2305, COSC 1436, COSC 1437, COSC 2436, PHYS 2425, PHYS 2426 (or 3 credit hour lecture and 1 hour lab courses for PHYS), one of the following: COSC 2325, COSC 2425.

[2] Please see your advisor for information on recommended micro-credential course offerings.