COMPUTER SCIENCE (B.S.)

Degree: Bachelor of Science

Major: Computer Science

Total Hours: 120

The computer science program at Lamar is a broad-based program emphasizing the areas of programming languages, data structures, information systems, the theory of programming languages, software engineering, networking, database, multimedia, applications of computer science, and computer architecture.

Students are required to take the ETS Computer Science Field Exam during the semester in which they are graduating. This program is also offered online.

The student who completes this four-year academic program is awarded a Bachelor of Science degree in Computer Science and is well prepared to pursue a professional career as a computer scientist or to pursue graduate work in computer science or in an area of related specialization. Advisor: Bo Sun.

Code	Title	Hours
General Education Core Curriculum		
Communication		
ENGL 1301	Composition I	3
Select one of the following:		3
COMM 1315	Public Speaking I	
COMM 1321	Business and Professional Speech	
ENGL 1302	Composition II	
FREN 1311	Beginning French I	
SPAN 1311	Beginning Spanish I	
Mathematics - 3 Hours		
MATH 2413	Calculus and Analytical Geometry I	4
Life and Physical Sciences		
Select two of the following:		8
BIOL 1406	General Biology I (Majors)	
BIOL 1407	General Biology II (Majors)	
PHYS 2425	University Physics I	
PHYS 2426	University Physics II	
Language, Philosophy and Culture		
Select three hours from the following:		3
DSDE 1374	Introduction to Deaf Studies	
ENGL 2300	Ethics and Literature	
ENGL 2322	British Literature	
ENGL 2326	American Literature	
ENGL 2331	World Literature	
ENGL 2376	African-American Literature	
FREN 2312	Intermediate French II	
PHIL 1370	Philosophy of Knowledge	
PHIL 2306	Ethics	
SPAN 2312	Intermediate Spanish II	
Creative Arts		
Select three hours from the following:		3
ARTS 1301	Art Appreciation	
ARTS 1303	Art History I	
COMM 1375	Film Appreciation	
COSC 1324	The Art of Computer Game Development	
DANC 2303	Dance Appreciation	
MUSI 1306	Music Appreciation	
MUSI 1309	Jazz History and Appreciation	
MUSI 1310	History of Rock and Roll	
PHIL 1330	Arts and Ideas	
THEA 1310	Theatre Appreciation	
American History		
Select two of the following:		6
HIST 1301	U S History I 1763-1877	
HIST 1302	U S History II Since 1877	
HIST 2301	Texas History	
Government/Political Science		
POLS 2301	Intro to American Government I	3
POLS 2302	Intro/American Government II	3
Social/Behavioral Sciences		
Select one of the following:		3
ANTH 2346	Introduction to Anthropology	
ANTH 2351	Cultural Anthropology	
BULW 1370	Business Environment and Public Policy	
CRIJ 1301	Intro to Criminal Justice	
ECON 1301	Principles and Policies	
ECON 2301	Principles of Economics I Macro	
ECON 2302	Principles of Economics II Micro	
FINC 2310	Intro to Consumer Finance	
INEN 2373	Engineering Economics	
PSYC 2301	General Psychology	
PSYC 2315	Lifespan Development	
POLS 1301	Intro to Political Science	
SOCI 1301	Introduction to Sociology	
SOWK 2361	Intro Social Work	
Component Area Option		
Select 3 additional hours from any core section above		3
The excess hours from core Mathematics and Science courses can be applied here		
Required Courses for Major		
COSC 1172	Thinking, Speaking, and Writing	1
COSC 1173	Programming Lab	1
COSC 1174	Fundamentals of Computing II Lab	1
COSC 1336	Programming Fundamentals I	3
COSC 1337	Programming Fundamentals II	3
COSC 2336	Programming Fundamentals III	3
COSC 2372	Computer Organization Assembly Language	3
COSC 2375	Discrete Structures	3
COSC 3302	Intro to Computer Theory	3
COSC 3304	Algorithms Design and Analysis	3
COSC 3308	Design Programming Languages	3
COSC 3325	Computer Law and Ethics	3
COSC 4272	Senior Assessment	2

COSC 4302	Operating Systems	3
COSC 4310	Introduction to Computer Architecture	3
CPSC 4317	Computer Networks	3
COSC 4333	Distributed Systems	3
CPSC 4340	Database Design	3
CPSC 4360	Software Engineering	3
MATH 2318	Linear Algebra	3
MATH 2414	Calculus and Analytical Geometry II	4
MATH 3370	Introduction to the Theory of Statistical Inference	3
One from:		3
COSC 4345	Cybersecurity Networks	
CPSC 4361	Secure Software Engineering	
CPSC 4363	Cybersecurity: Systems	
Elective Courses		
COSC/CPSC Electives		
Select two of the following:		6
COSC 3306	UNIX/C++	
COSC 4301	Special Topics	
COSC 4319	Computer Graphics	
COSC 4324	Computer Game Development I	
COSC 4345	Cybersecurity Networks	
CPSC 4315	Network System Administration	
CPSC 4330	Multimedia Processing	
CPSC 4361	Secure Software Engineering	
CPSC 4363	Cybersecurity: Systems	
CPSC 4370	Artificial Intelligence	
CPSC 4375	Machine Learning	
COSC/CPSC/ELEN Elective		
Select two of the following:		6
COSC 4301	Special Topics	
COSC 4319	Computer Graphics	
COSC 4324	Computer Game Development I	
COSC 4345	Cybersecurity Networks	
CPSC 4315	Network System Administration	
CPSC 4330	Multimedia Processing	
CPSC 4370	Artificial Intelligence	
CPSC 4375	Machine Learning	
ELEN 3381	Electrical Analysis	
ELEN 4486	Embedded Microprocessor Systems	
ELEN 4387	Computer Organization and Architecture	
ELEN 4304	Advanced Topics	
Academic Elective		
Select any college-level course that grants semester credit hours		3
Total Hours		**120**

Course	Title	Hours
First Year		
Fall		
COSC 1336	Programming Fundamentals I	3
COSC 1173	Programming Lab	1
COSC 1172	Thinking, Speaking, and Writing	1
HIST 1301	U S History I 1763-1877	3
Creatve Arts		3
MATH 2413	Calculus and Analytical Geometry I	4
	Hours	**15**
Spring		
ENGL 1301	Composition I	3
COSC 1337	Programming Fundamentals II	3
COSC 1174	Fundamentals of Computing II Lab	1
Social/Behavioral Science		3
Communication		3
HIST 1302	U S History II Since 1877	3
	Hours	**16**
Second Year		
Fall		
COSC 2336	Programming Fundamentals III	3
MATH 2414	Calculus and Analytical Geometry II	4
Component Area Option		3
Lab Science		4
	Hours	**14**
Spring		
COSC 2325	Computer Organization	3
COSC 2375	Discrete Structures	3
POLS 2301	Intro to American Government I	3
Lab Science		4
Language, Philosophy & Culture		3
	Hours	**16**
Third Year		
Fall		
COSC/CPSC/ELEN Elective		3
MATH 2318	Linear Algebra	3
COSC 3304	Algorithms Design and Analysis	3
MATH 3370	Introduction to the Theory of Statistical Inference	3
CPSC 4360	Software Engineering	3
	Hours	**15**
Spring		
COSC 3325	Computer Law and Ethics	3
COSC 3302	Intro to Computer Theory	3
COSC 3308	Design Programming Languages	3
Select one of the following:		3
CPSC 4361	Secure Software Engineering	
CPSC 4363	Cybersecurity: Systems	
COSC 4345	Cybersecurity Networks	
COSC/CPSC Elective		3
	Hours	**15**
Fourth Year		
Fall		
COSC 4302	Operating Systems	3
COSC/CPSC Elective		3
Creative Arts		3
CPSC 4340	Database Design	3
Academic Elective		3
	Hours	**15**
Spring		
COSC 4333	Distributed Systems	3
COSC 4310	Introduction to Computer Architecture	3
COSC/CPSC/ELEN Elective		3
COSC 4272	Senior Assessment	2
CPSC 4317	Computer Networks	3
	Hours	**14**
	Total Hours	**120**

Comments:

a. Changes and substitutions must be approved by the department chair.
b. A grade of B or better is required in COSC 1336 Programming Fundamentals I before taking COSC 1337 Programming Fundamentals II. A grade of B or better is required in COSC 1336 Programming Fundamentals I and COSC 1337 Programming Fundamentals II before taking COSC 2336 Programming Fundamentals III.
c. Approved Lab Science must be chosen from the following four courses: BIOL 1406 General Biology I (Majors) | BIOL 1407 General Biology II (Majors), PHYS 2425 University Physics I | PHYS 2426 University Physics II.
d. Acceptable COSC/CPSC electives are: COSC 3306 UNIX/C++, COSC 4301 Special Topics, COSC 4319 Computer Graphics, COSC 4324 Computer Game Development I, COSC 4345 Cybersecurity Networks , CPSC 4315 Network System Administration, CPSC 4330 Multimedia Processing, CPSC 4361 Secure Software Engineering, CPSC 4363 Cybersecurity: Systems, CPSC 4370 Artificial Intelligence, CPSC 4375 Machine Learning
e. Acceptable COSC/CPSC/ELEN electives are 3381, 4486, 4387, 4304 (with approval.
f. Sufficient academic elective hours are required to total 120 hours. Any college-level course which offers semester credit hours is permitted.