BACHELOR OF SCIENCE, MAJOR IN COMPUTING SCIENCE: 4+1 MS COMPUTING AND DATA SCIENCE

Code	Title	Hours
Bachelor of Science, Major in Computing Science (Computing Science, CS): 4+1 MS in Computing and Date Science		
Core Curriculum (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/)		
Component Area I (Communication)		6
Component Area II (Mathematics) [1]		3
Component Area III (Life and Physical Science)		8
Component Area IV (Language, Philosophy, and Culture)		3
Component Area V (Creative Arts)		3
Component Area VI (U.S. History)		6
Component Area VII (Political Science/Government)		6
Component Area VIII (Social and Behavioral Sciences)		3
Component Area IX (Component Area Option) [1]		4
Degree Specific Requirements		
MATH 1420	Calculus I [1,2]	4
MATH 1430	Calculus II	4
MATH 2395	Discrete Mathematics	3
Math (Advanced)		3
STAT 3379	Statistical Methods in Practice	3
Science (In addition to Component Area III)		8
Major: Foundation		
COSC 1436	Programming Fundamentals I	4
COSC 1437	Programming Fundamentals II	4
COSC 2329	Computer Organization & Machine Language	3
COSC 3318	Data Base Management Systems	3
COSC 3319	Data Structures and Algorithms	3
COSC 4318	Advanced Language Concepts	3
COSC 4319	Software Engineering	3
COSC 4349	Professionalism and Ethics	3
Major: Concentration		
COSC 2347	Special Topics/Programming	3
COSC 3327	Computer Architecture	3
COSC 4149	Seminar in Computer Science	1
COSC 4316	Compiler Design & Construction	3
COSC 4327	Computer Operating Systems	3
COSC/DFSC Advanced Electives		6
Electives: Advanced General		
Advanced General Electives		12
4+1 Master of Science in Computing and Data Science [3]		
COSC 5318	Database Systems	3
COSC 5319	Algorithm Design and Analysis	3
COSC 5340	Special Topics (taken twice)	6
or COSC 5300	Computer Science Internship	
COSC 6319	Software Engineering	3
Track Electives		**9**
Thesis OR Internship Option		6
Thesis		
COSC 6049	Thesis	

COSC 6348	Thesis	
Internship		
COSC 5300	Computer Science Internship	
COSC 6347	Programming Practicum	
Total Hours		**150**

[1] MATH 1420 satisfies the Core Curriculum requirement for Component Area II (Mathematics), one semester credit hour of the Core Curriculum requirement for Component Area IX (Component Area Option), and the Degree Specific requirement.

[2] Students who are not eligible for enrollment in MATH 1420 will have additional mathematics requirements.

[3] Students planning to pursue the 4+1 CDS option must complete the Graduate Application process and be accepted to the MS in CDS program. In order to apply to the 4+1 CDS program students must complete all undergraduate degree plan requirements (minimum of 120 semester credit hours) and all admission requirements. Once a student is accepted to the graduate CDS program, students are eligible to begin the CDS program upon completion of all admission requirements. The graduate program will begin in the Summer I semester term each year and will run as a cohort model. Students may apply to the program while coursework is in-progress but may not begin the graduate CDS program until the 120 semester credit hours are completed.

Notes

Students must earn a 2.0 minimum overall GPA in all coursework.

Students must meet a 2.0 minimum overall major GPA in all major coursework.

Students must earn a 2.0 minimum SHSU GPA in all coursework.

Students must meet a 2.0 minimum SHSU major GPA in all major coursework.

Students who are preparing to apply to gradate CDS programs should earn a "C" or better in their coursework. All CS majors and/or minors must earn a "C" or better for all COSC/DFSC courses and all CDS prospective students must earn a "C" or better in all pre-requisite courses.

The minimum number of credit hours required for a baccalaureate degree is 120. The minimum number of advanced credit hours for a baccalaureate degree is 42. Students may take free elective courses beyond the hours identified in the recommended 4-year plan to meet the overall credit hour and advanced credit hour requirements.

First Year

Fall	Hours	Spring	Hours
Component Area III (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii)	4	Component Area III (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii)	4
COSC 1436	4	COSC 1437	4
ENGL 1301[1]	3	ENGL 1302[1]	3
MATH 1420[2]	4	MATH 1430	4
	15		**15**

Second Year

Fall	Hours	Spring	Hours
Component Area IV (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv)	3	Component Area V (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav)	3
Component Area VIII (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii)	3	COSC 2347	3
COSC 2329	3	COSC 3318	3
HIST 1301[3]	3	HIST 1302[3]	3
POLS 2305[4]	3	POLS 2306[4]	3
	15		**15**

Third Year

Fall	Hours	Spring	Hours
COSC 3319	3	Component Area IX (http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix)	3
Advanced General Electives	6	COSC 3327	3
Degree Specific Requirement: Science	4	COSC 4327	3
MATH (Advanced)	3	STAT 3379	3
		Degree Specific Requirement: Science	4
	16		**16**

Fourth Year

Fall	Hours	Spring	Hours	Summer	Hours
COSC 4316	3	COSC 4149	1	COSC 5340 or 5300 (taken twice)[5]	6
COSC 4318	3	COSC 4319	3		
Advanced General Elective	6	COSC 4349	3		
COSC/DFSC Advanced Elective	3	COSC/DFSC Advanced Elective	3		
MATH (Advanced)	3				
	18		**10**		**6**

Fifth Year

Fall	Hours	Spring	Hours	Summer	Hours
COSC 5318	3	COSC 5319	3	Track Electives	3
Track Elective	6	COSC 6319	3	Thesis OR Internship	3
		Thesis OR Internship Option		Thesis	
		Thesis		COSC 6049	
		COSC 6049		COSC 6348	
		COSC 6348		Internship	
		Internship		COSC 5300	
		COSC 5300		COSC 6347	
		COSC 6347			
		9		**9**	**6**

Total Hours: 150

[1] Satisfies Core Curriculum requirement for Component Area I (Communications).

[2] Satisfies the Core Curriculum requirement for Component Area II (Mathematics), one semester credit hour of the Core Curriculum requirement for Component Area IX (Component Area Option), and the Degree Specific requirement. Students who are not eligible for enrollment in MATH 1420 will have additional mathematics requirements.

[3] Satisfies Core Curriculum requirement for Component Area VI (U.S. History).

[4] Satisfies Core Curriculum requirement for Component Area VII (Political Science/Government).

[5] Students planning to pursue the 4+1 CDS option must complete the Graduate Application process and be accepted to the MS in CDS program. In order to apply to the 4+1 CDS program students must complete all undergraduate degree plan requirements (minimum of 120 semester credit hours) and all admission requirements. Once a student is accepted to the graduate CDS program, students are eligible to begin the CDS program upon completion of all admission requirements. The graduate program will begin in the Summer I semester term each year and will run as a cohort model. Students may apply to the program while coursework is in-progress but may not begin the graduate CDS program until the 120 semester credit hours are completed.

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The Texas Higher Education Coordinating Board (THECB) marketable skills initiative is part of the state's **60x30TX plan** and was designed to help students articulate their skills to employers. Marketable skills are those skills valued by employers and/or graduate programs that can be applied in a variety of work or education settings and may include interpersonal, cognitive, and applied skill areas.

The BS in Computing Science (Computing Science, CS): 4+1 MS in Computing and Data Science is designed to provide graduates with the following marketable skills:

- Software design.
- Database management.
- Complex problem-solving.
- Application of theoretical principles to the development of technological problems.
- Technical communication.

- Identify and solve complex computing problems in information technology, business, medicine, and other essential industries.
- World-class soft skills in complex problem-solving, communication, and creative thinking.
- Strong technical skills and interpersonal skills to work as a group.
- Superior technical writing skills to document and publish their findings.