NAME:_____ WT ID:_____ DATE:_____

Computer Science—Software Engineering Track
Engineering and Computer Science
ECS Building, Room 119   651-5257

Bachelor of Science Degree
BS.CS.SFWR.ENGR (307)

CORE CURRICULUM COURSES: 42 HOURS	HRS	
Communication (Code 10)		
ENGL 1301 Intro. To Academic Writing & Argumentation **OR** ENGL 1311 Writing About Ideas	3	
COMM 1315, 1318, or 1321**	3	
Mathematics (20)		
See **University Core Requirements** below	(3)	
Life and Physical Sciences (30)		
See **University Core Requirements** below	(6)	
Language, Philosophy and Culture (40)		
ANTH 2351, ENGL 2321*, 2326*, 2331*, 2341*, 2343*; HIST 2311, 2323, 2372; MCOM 1307; PHIL 1301, 2374; SPAN 2311*, 2312*/***, 2313*, 2315*, or 2371 **Choose 1**	3	
Creative Arts (50)		
ARTS 1301, 1303, 1304; DANC 2303; MUSI 1306, 1307 (for music majors), 1310; or THRE 1310 **Choose 1**	3	
American History (60)		
HIST 1301, 1302, 2381, 2382, 2301 **Choose 2**	6	
Government/Political Science (70)		
POSC 2305 and 2306	6	
Social and Behavioral Sciences (80)		
AGBE 2317*; COMM 2377; CRIJ 1301; ECON 2301, 2302; GEOG 1302; PSYC 2301; SOCI 1301 **Choose 1**	3	
Component Area Option (90)		
See **University Core Requirements** below	(6)	

COMPUTER SCIENCE—SOFTWARE ENGINEERING TRACK REQUIREMENTS: 94 HOURS
● A grade of "C" or better must be earned in all courses required for major.
● A grade of "C" or better is mandatory for all prerequisites listed for ECS courses required for Computer Science majors.

UNIVERSITY CORE REQUIREMENTS: 15 HOURS		
CORE 20 MATH 2413*[3] Calculus I	3	
CORE 30 CHEM 1411*[3] and 1412*[3] OR PHYS 2425*[3] and 2426*[3]	6	
CORE 90 MATH 2413[1] **AND** CHEM 1411L[1] and 1412L[1] OR PHYS 2425L[1] and 2426L[1]	3	
CORE 90 ENGL 1302* Academic Writing and Research **OR** ENGL 1312* Writing About Ideas II **OR** ENGL 2311* Introduction to Professional and Technical Communication	3	

MAJOR REQUIREMENTS: 51 HOURS		
CS 1301 Introduction to Computer Science	3	
CS 1337, 1337L Programming Principles I **OR** CIDM 2315 Programming Business Applications	3	
CS 2325*, 2325L Computer Organization and Assembly Language	3	
CS 2337*, 2337L Programming Principles II	3	
CS 3303* Object-Oriented Software Development	3	
CS 3305* Data Structures and Algorithms	3	

CS 3307* Algorithm Design and Analysis	3	
CS 3310* Programming Languages	3	
CS 3340* Software Engineering **OR** CIDM 4360* Object-Oriented Software Development	3	
CS 3352* Operating Systems and Networking	3	
CS 3372* Net-Centric Computing **OR** CIDM 3385* Network Security & Data Communications	3	
CS 4325* Computer Architecture	3	
CS 3350* Database Systems Use, Design & Implementation **OR** CIDM 3350* Database Systems Design	3	
CS 4360* Approaches to Internet and Computer Networks Security	3	
CS 4385* Concurrency and Distributed Systems	3	
CS 4390* Senior Capstone Project I	3	
CS 4391* Senior Capstone Project II	3	

REQUIRED MATH COURSES: 16 HOURS		
MATH 2321* Discrete Structures I	3	
MATH 2322* Discrete Structures II	3	
MATH 2414* Calculus II	4	
Take 6 hours from: MATH 3311* Linear Algebra MATH 3321* Probability MATH 3325* Introduction to Proofs MATH 3340* Calculus III MATH 3342* Differential Equations I MATH 3343* Differential Equations II MATH 4310* Modern Algebra with Cryptography MATH 4340* Complex Variables I MATH 4341* Advanced Calculus MATH 4361* Statistics for the Sciences MATH 4362* Introduction to Numerical Analysis	6	

ADDITIONAL REQUIREMENTS FOR SOFTWARE ENGINEERING TRACK: 12 HOURS		
Take twelve hours from: CS 3321*, 3322*, 3341*, 3387*, 4095*, 4097*, 4321*, 4322*, 4330*, 4341*, 4342*, 4392*, 4398	12	
TOTAL HOURS REQUIRED TO COMPLETE DEGREE	121	

* Indicates prerequisites—see catalog for more information.
** Recommended.
*** Or an equivalent course (second year, second semester) in a foreign language.

NOTE: This is NOT a degree plan. All undergraduate students must request an official degree plan from their academic dean's office by the time they have completed 30 credit hours.

Major: Computer Science – Software Engr. Track, B.S.   Major Code: 307

Year 1: Fall	
CORE 10 (Communication) – ENGL 1301 or 1311	3
CS 1301 Introduction to Computer Science	3
CORE – See checklist for options[1]	3
CORE – See checklist for options[1]	3
CORE – See checklist for options[1]	3
Total:	15

Year 1: Spring	
CS 1337/1337L Programming Principles I **or** CIDM 2315 Programming Business Applications	3
CORE 20 (Mathematics) – MATH 2413 Calculus I	4
CORE 90 (Component Area Option) – ENGL 1302, 1312, or 2311	3
CORE – See checklist for options[1]	3
CORE – See checklist for options[1]	3
Total:	16

Year 2: Fall	
CS 2337/2337L Prdogramming Principles II	3
MATH 2321 Discrete Structures I	3
CORE 30 (Life & Phys. Sci.) – CHEM 1411 or PHYS 2425	3
CORE 90 (Component Area Option) – CHEM 1411L or PHYS 2425L	1
MATH 2414 Calculus II	4
CORE – See checklist for options[1]	3
Total:	17

Year 2: Spring	
CS 2325/2325L Computer Organization & Assembly Languages	3
CS 3305 Data Structures and Algorithms	3
CORE 30 (Life & Phys. Sci.) – CHEM 1412 or PHYS 2426	3
CORE 90 (Component Area Option) – CHEM 1412L or PHYS 2426L	1
CORE – See checklist for options[1]	3
MATH 2322 Discrete Structures II	3
Total:	16

Year 3: Fall	
CS 3307 Algorithm Design and Analysis	3
CS 3303 Object-Oriented Software Development	3
CS 3352 Operating Systems and Networking	3
CS 3350 Database Systems Use, Design & Implementation **or** CIDM 3350 Database Systems Design	3
CS 4325 Computer Architecture	3
Total:	15

Year 3: Spring	
CS 3372 Net-Centric Computing **or** CIDM 3385 Network Security & Data Communications	3
CS 3340 Software Engineering **or** CIDM 4360 Object-Oriented Analysis & Design	3
CS 3310 Programming Languages	3
Soft. Engr. Electives – Take 1st of 4 courses from: CS 3321, 3322, 3341, 3387, 4095, 4097, 4321, 4322, 4330, 4392, 4398, 4341, 4342	3
1st of 2 courses from: MATH 3311, 3321, 3325, 3340, 3342, 3343, 4310, 4340, 4341, 4361, 4362	3
Total:	15

Year 4: Fall	
2nd of 2 courses from: MATH 3311, 3321, 3325, 3340, 3342, 3343, 4310, 4340, 4341, 4361, 4362	3
CS 4390 Senior Capstone Project I	3
Soft. Engr. Electives – Take 2nd of 4 courses from: CS 3321, 3322, 3341, 3387, 4095, 4097, 4321, 4322, 4330, 4392, 4398, 4341, 4342	3
CS 4360 Approaches to Internet & Computer Networks Security	3
Soft. Engr. Electives – Take 3rd of 4 courses from: CS 3321, 3322, 3341, 3387, 4095, 4097, 4321, 4322, 4330, 4392, 4398, 4341, 4342	3
Total:	15

Year 4: Spring	
CS 4391 Senior Capstone Project II	3
CS 4385 Concurrency & Distributed Systems	3
Soft. Engr. Electives – Take 4th of 4 courses from: CS 3321, 3322, 3341, 3387, 4095, 4097, 4321, 4322, 4330, 4392, 4398, 4341, 4342	3
CORE – See checklist for options[1]	3
Total:	12

[1] **CORE:** Computer Science majors are required to take specific courses for Core 20, Core 30, and Core 90. For all other categories, they may select from any available options (see degree checklist). Apart from the major-specific core requirements, there is no set order in which core courses must be taken.

Identified Marketable Skills	Top Three Local Employers or Industries/Professional Programs/Possible Career Opportunities

Additional notes:

- The core curriculum must total exactly 42 hours; excess hours must be moved to the major as an elective or a major requirement and stay within the 120-hour requirement or approved total submitted to the Coordinating Board for degree requirements. Some majors specify particular courses to meet core curriculum requirements when options are available.

- At least 36 hours of advanced work (3000- or 4000-level courses) for which tuition is paid must be earned at WTAMU. A maximum of six semester hours in religion (RELI) and six semester hours in physical education (PHED) courses can count toward a baccalaureate degree.

DISCLAIMER: This curriculum guide should be used in conjunction with the corresponding degree checklist for general planning purposes only. The degree checklist (later a student's official degree plan) should be referred to as the comprehensive list of all courses required for the degree. An official degree plan is required after completing 30 hours. Students should always seek the advice of their academic adviser before scheduling classes.